

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

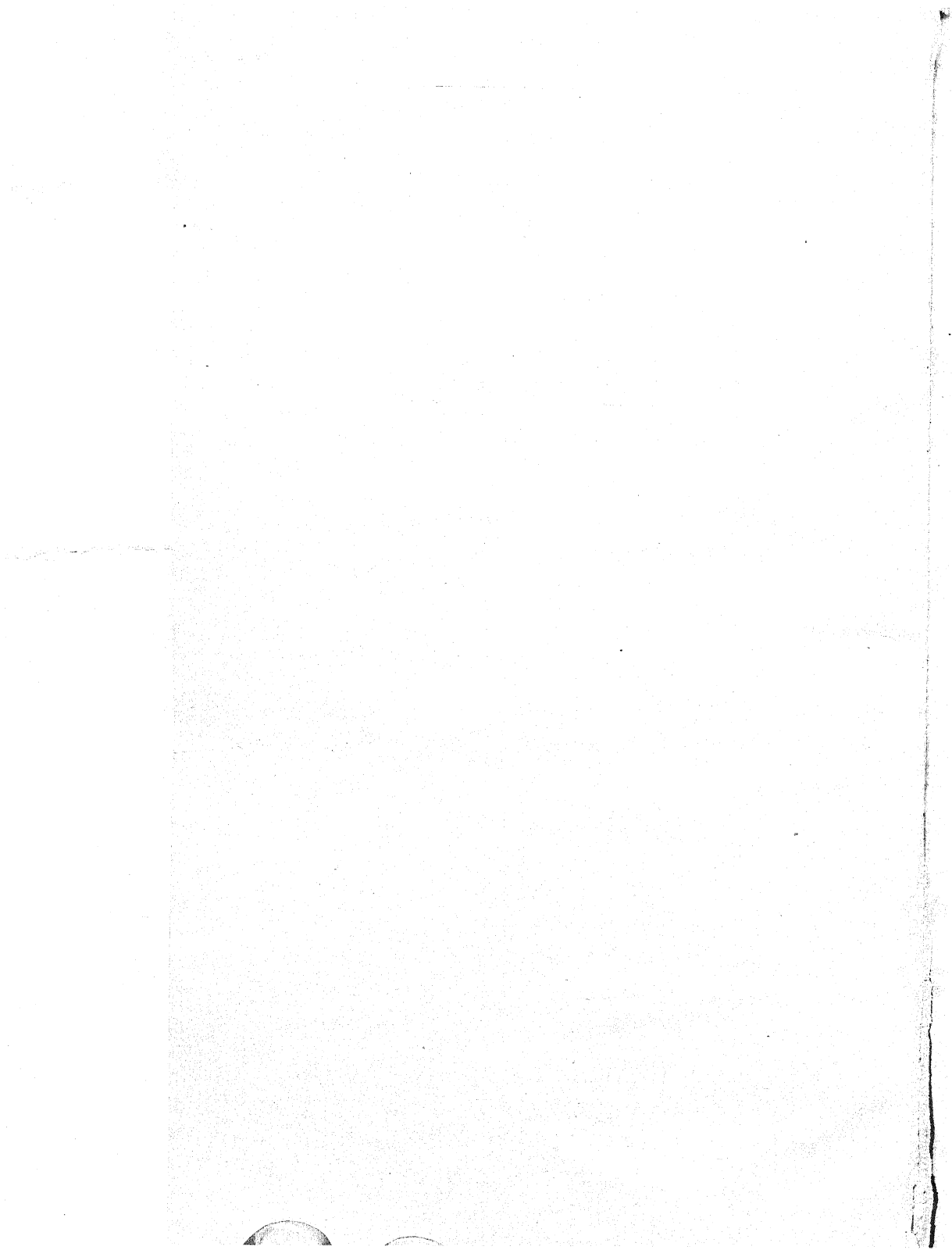
UNITED STATES

GEOLOGICAL SURVEY

No. 152



WASHINGTON
GOVERNMENT PRINTING OFFICE
1898



UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

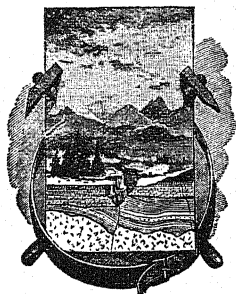
A CATALOGUE

OF THE

Cretaceous and Tertiary Plants of North America

BY

FRANK HALL KNOWLTON



WASHINGTON
GOVERNMENT PRINTING OFFICE
1898

CONTENTS.

	Page.
Letter of transmittal	7
Introduction.....	9
Bibliography	13
Catalogue	24
	5



LETTER OF TRANSMITTAL.

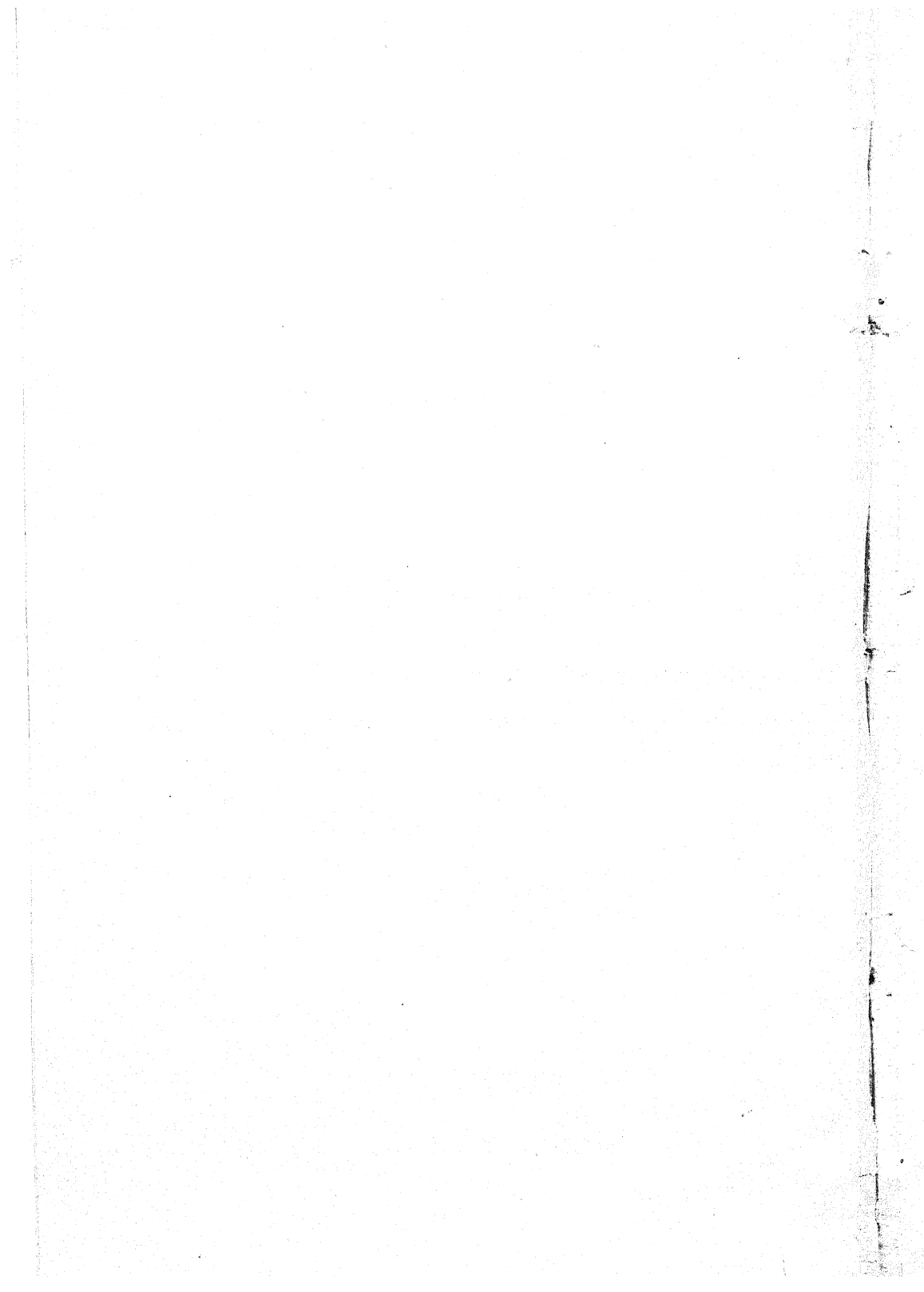
DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., January 12, 1898.

SIR: I have the honor to transmit herewith the manuscript of a catalogue of the Cretaceous and Tertiary plants of North America, and to request its publication as a bulletin of the Survey.

Very respectfully, yours,

F. H. KNOWLTON,
Assistant Paleontologist.

HON. CHARLES D. WALCOTT,
Director United States Geological Survey.



A CATALOGUE OF THE CRETACEOUS AND TERTIARY PLANTS OF NORTH AMERICA.

By F. H. KNOWLTON.

INTRODUCTION.

This catalogue of the Cretaceous and Tertiary plants of North America is the outcome of the author's personal needs, and is presented, even in its present somewhat imperfect form, in the hope that it may be of assistance to other workers in this field.

The first catalogue of approximately this scope was published by Prof. Leo Lesquereux in the Tenth Annual Report of the United States Geological and Geographical Survey of the Territories¹ under the title *Catalogue of the Cretaceous and Tertiary Plants of North America, with References to the Descriptions*. In this catalogue the species are arranged in botanical sequence. The Cretaceous flora embraced only 157 species and the Tertiary flora 549 species, or a total of 706 for these two great geological systems. As a proof of the rapid growth of paleobotanical knowledge in this country during the twenty-one years between that and the present enumeration, it may be stated that the Potomac flora alone now numbers more species than the total Cretaceous and Tertiary floras known to Lesquereux, and that the flora of the Dakota group has more than twice as many species (460) as the whole Cretaceous had, as then known.

The only other catalogue is that of S. A. Miller, published in 1881 under the title *North American Mesozoic and Cænozoic Geology and Palæontology; or, An Abridged History of Our Knowledge of the Triassic, Jurassic, Cretaceous, and Tertiary Formations of this Continent*. This is hardly more than a crude compilation from that of Lesquereux and certain publications that had appeared between the date of that and the year 1881.

A number of lists without references or synonymy have been published which embrace simply the names and in some cases the distribution of the species—such, for example, as Lesquereux's "Table of distribution of the species of fossil plants in the Tertiary formations

¹ Washington, 1876 [1878], pp. 487-520.

of North America;"¹ a list under the same title in the following volume;² a "Table showing the geographical distribution of the fossils of the Laramie group, collected during the season of 1877;"³ "A table of distribution of the plants of the Cretaceous Cenomanian formation;"⁴ "Table of distribution of the species of the Laramie group;"⁵ "Table of distribution of the plants of the Green River and White River group;"⁶ "Table of distribution of North American Miocene fossil plants;"⁷ "Table showing the distribution of the plants of the Dakota group;"⁸ Lester F. Ward: "Table of distribution of Laramie, Senonian, and Eocene plants,"⁹ etc.

In the present catalogue the entire flora is arranged in a single alphabetical sequence. This arrangement precludes the duplication of species which may occur in more than one formation, and is, moreover, easier of use than when the species are arranged according to botanical affinities.

I have given for each genus the original date and place of publication. In the case of the exclusively fossil genera much care has been expended in verifying these points, and while it is too much to expect that all are absolutely correct, it is hoped that the errors will prove to be few. For the living genera that have also been found fossil, the date and place of publication have been taken mainly from the Kew Index and have not in all cases been verified. The dates of these later genera are not, however, of great importance in the present connection, since botanists are not agreed as to the date that shall be taken as the initial point for genera. One school would make the introduction of binomial nomenclature, or the publication of Linnaeus's *Species Plantarum*, 1753, as the initial point for both genera and species, while another school would take the publication of Linnaeus's *Systema*, in 1735, as the starting point for genera. Other botanists would go still further back to Tournefort, who has been called the father of genera, or even to the remote place in literature when a genus was first printed, no matter in what connection. It would seem wise, therefore, to settle on some important date as the initial point. For convenience the date selected in the Kew Index—1735—is here taken for the living genera. Fortunately the science of paleobotany is so young that all of the generic names that have been given in it are of later date than any of the dates in controversy, since all are later than 1800.

In the case of species, the original place and date of publication have been given in all instances. This is followed by several of the most important references, especially such as refer to descriptions and fig-

¹ Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., pp. 307-309, 1871 [1872].

² Op. cit., pp. 410-417 (1872 [1873]).

³ Op. cit., pp. 255 (1877 [1879]).

⁴ Cret. and Tert. Fl., pp. 93-103 (1883).

⁵ Op. cit., pp. 115-120.

⁶ Op. cit., pp. 206-212.

⁷ Op. cit., pp. 266-272.

⁸ Monogr. U. S. Geol. Surv., XVII, pp. 222-225, 1891.

⁹ Sixth Ann. Rept. U. S. Geol. Surv., pp. 443-514, 1886.

ures, but no attempt has been made to make it absolutely complete, since to have done this would have greatly increased the labor of compilation without adding much to its value as a catalogue. The original and, for sake of convenience, most important references are given.

When the species is a foreign one the original reference is given, followed by a reference to the first place where it is recorded as belonging to our flora. Then follow the references to figures and descriptions, if there be any, relating to its North American history.

The synonymy is placed in proper order under the species to which it belongs. Each synonym is, however, entered in its proper alphabetical place, followed by an indication of the form to which it is now referred. Thus: "*Ficus* ? *fimbriata* Lx. = *Eremophyllum fimbriatum*."

In the numerous reports on fossil plants published in the Annual Reports of the Hayden Survey, Lesquereux described many species supposed to be new to science, and also identified numerous foreign species, that were never afterwards alluded to by him. There are probably more than 100 species coming under this heading that are not entitled to recognition as belonging to our flora. These new or foreign species were described or identified from time to time in these preliminary reports, but when Lesquereux came to study them more carefully, in preparing them for the final monographs, they were discarded or merged into other species, and no record was made of such disposition. They stand, therefore, in the books as valid species, while in reality they are hardly more than *nomina nuda*. The specimens upon which they were based are now lost or embraced under other names in such a way that there is absolutely no connection between them. In the following catalogue these species have been indicated by a bracketed statement at the end. Thus: "*Quercus Goldianus* Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398 (1873 [1874]). [Not recognized by its author after first description.]"

No attempt has been made in this catalogue to give an absolutely complete account of the geographical distribution of the various species. It would have required a monographic revision of each species to determine accurately its areal distribution, and such a work was not contemplated at the present time. The distribution here given is taken mainly from the books, with little or no revision, and while it is undoubtedly correct in a large majority of cases, it is not to be taken as absolutely so. One of the tasks of the future will be to work out more completely the geographical distribution of our flora.

In similar manner, the geological distribution as here given is not to be taken as final. It is compiled from the books in most cases, and while it has been given as completely and as accurately as was possible under the circumstances, it is constantly changing to accord with the changes in the conception of the various geological horizons. As an example, the plant-bearing horizon at Point of Rocks, Wyoming, had always been referred to the true Laramie, until it was found, in 1896,¹

¹ See Stanton and Knowlton: Bull. Geol. Soc. Am., Vol. VIII, pp. 127-156.

that it was below well-defined marine Cretaceous, and hence in the Montana formation.

Another source of uncertainty results from the disagreement among geologists and paleontologists as to the age of various beds. Thus, by some the Fort Union beds are regarded as Cretaceous and by others as Tertiary, and the so-called "Arctic Miocene" is coming to be regarded as Eocene. When it has been possible, without circumlocution, the horizon has been indicated in a way that will fix its relative position without going too far. Thus the use of the Belly River series, Denver beds, Fort Union beds, Amboy clays, Potomac formation, etc., indicates sufficiently the geological position, without attempting a discrimination perhaps unwarranted by the present state of our knowledge. But above all it should be remembered that this is an attempt at a catalogue of our Cretaceous and Tertiary plants, and is not intended as a complete exposition of their geographical or geological distribution.

No arbitrary signs or characters have been used in this work. In a few cases it was found necessary to give new names on account of the old name being preoccupied. In such cases the new name is followed by "nom. nov." In accordance with principles quite generally adopted among recent botanists, the attempt is made in this catalogue to restore the oldest specific name under which a species was described. This has resulted in a number of new combinations, which are indicated by the abbreviation "n. comb." In the case of two dates given for a publication (e. g., Fl. Amboy Clays, 1895 [1896]) the first is the title-page date, the bracketed date being the actual date of issue.

The bibliography consists simply of a list of the North American works and papers that have been consulted in preparing this catalogue, together with such others as contain original descriptions of our plants. It was not thought worth while to give a bibliography of the references to the numerous foreign species that have been identified in our flora, with the single exception of those found in the various parts of Heer's *Flora Fossilis Arctica*.

In conclusion, I beg to acknowledge my indebtedness to Prof. Lester F. Ward for valuable suggestions, use of books, etc., and to his assistant, Miss C. H. Schmidt, for assistance in cataloguing and verifying references.

BIBLIOGRAPHY.

Britton (N. L.). Geological notes in western Virginia, North Carolina, and eastern Tennessee.

Trans. N. Y. Acad. Sci., Vol. V, pp. 215-223, 1886.

Capellini (J.) and Heer (O.). Les phyllites crétacées du Nebraska.

Mém. d. l. soc. helvétique d. sci. naturelle, pp. 1-22, Pls. I-IV, 1866.

Conwentz (H.). Cupressinoxylon taxodioides, ein vorweltliches cypresenähnliches Holz aus Californien.

Schriften d. Naturf. Gesell. in Danzig, Vol. IV, 3 heft, pp. 122-124, 1878.

— Ueber ein tertiäres Vorkommen cypressenartiger Hölzer bei Calistoga in Californien.

Neues Jahrb., 1878, pp. 800-813, Pls. XIII, XIV, 1878.

Cragin (F. W.). Contributions to the palæontology of the plains. No. 1.

Bull. Washburn College Laboratory, Vol. II, No. 10, pp. 65-68, 1889.

Cramer (C.). Fossile Hölzer der artischen Zone. II. Fossile Hölzer des Bankslandes.

In Heer (O.), Flora fossilis arctica, Vol. I, pp. 170-175, Pls. XXIV-XXIX, 1868.

Dawson (J. W., now Sir William). On the newer Pliocene and post-Pliocene deposits of the vicinity of Montreal, with notices of fossils recently discovered in them.

Can. Nat. and Geol., Vol. II, pp. 401-426, 1857.

— The evidence of fossil plants as to the climate of the post-Pliocene period in Canada.

Can. Nat., new series, Vol. III, pp. 69-76, 1868.

— Note on the fossil plants from British Columbia, collected by Mr. James Richardson in 1872.

Geol. Surv. Canada, Report of Progress for 1872-73, Appendix I, pp. 66-71, Pl. I, 1873.

— Note on the plants, collected by Mr. G. M. Dawson, from the lignite Tertiary deposits near the forty-ninth parallel.

Report on the geology and resources of the region in the vicinity of the forty-ninth parallel, from the Lake of the Woods to the Rocky Mountains, Appendix A, pp. 327-331, Pls. XV, XVI, 1875.

— Note by Principal Dawson, on fossil plants collected by Dr. Selwyn in the lignite Tertiary formation of Roche Percée, Souris River.

Geol. Surv. Canada, Report of Progress for 1879-80, Appendix II, p. 5 A-55A, 1881.

Dawson (J. W., now Sir William). On the Cretaceous and Tertiary floras of British Columbia and the Northwest Territory.

Trans. Roy. Soc. Canada, 1882, Vol. I, Sec. IV, pp. 15-34, Pls. I-VIII, 1883.

— On the Mesozoic floras of the Rocky Mountain region of Canada.

Trans. Roy. Soc. Canada, 1885, Vol. III, Sec. IV, pp. 1-22, Pls. I-IV, 1886.

— On the fossil plants of the Laramie formation of Canada.

Trans. Roy. Soc. Canada, 1886, Vol. IV, Sec. IV, pp. 19-34, Pls. I, II, 1887.

— Note on fossil woods and other plant remains, from the Cretaceous and Laramie formations of the Western Territories of Canada.

Trans. Roy. Soc. Canada, 1887, Vol. V, Sec. IV, pp. 31-37, 1888.

— The geological history of plants.

Int. Sci. Series, Vol. LXI, pp. 1-290, 1888.

— On fossil plants collected by Mr. R. A. McConnell on Mackenzie River, and by Mr. T. C. Weston on Bow River.

Trans. Roy. Soc. Canada, 1889, Vol. VII, Sec. IV, pp. 69-74, Pls. X, XI, 1890.

— On fossil plants from the Similkameen Valley and other places in the southern interior of British Columbia.

Trans. Roy. Soc. Canada, 1890, Vol. VIII, Sec. IV, pp. 75-91 (figs. in text), 1891.

— On the correlation of early Cretaceous floras in Canada and the United States, and on some new plants of the period.

Trans. Roy. Soc. Canada, 1892, Vol. X, Sec. IV, pp. 79-93 (figs. 1-16 in text), 1893.

— On new species of Cretaceous plants from Vancouver Island.

Trans. Roy. Soc. Canada, 1893, Vol. XI, Sec. IV, pp. 53-72, Pls. V-XII, 1894.

— On collections of Tertiary plants from the vicinity of the city of Vancouver, B. C.

Trans. Roy. Soc. Canada, 1895-96, 2d series, Vol. I, Sec. IV, pp. 137-152, Pls. IV-VIII, 1896.

Dawson (Sir William) and **Dawson** (G. M.). On Cretaceous plants from Port McNeill, Vancouver Island.

Trans. Roy. Soc. Canada, 1888, Vol. VI, pp. 71, 72, 1889.

— and **Penhallow** (D. P.). On the Pleistocene flora of Canada.

Bull. Geol. Soc. Am., Vol. I, pp. 311-334, 1890.

In two parts: Geology of the deposits, by Dawson; Notes on the Pleistocene plants, by Penhallow.

Diller (J. S.) and **Stanton** (T. W.). See **Fontaine** (W. M.).

Felix (Johannes). Untersuchungen über fossile Hölzer.

Zeitschr. d. Deutschen geol. Gesell., Jahrg. 1886, pp. 483-492, Pl. XII, 1886.

— Studien über fossile Pilze.

Zeitschr. d. Deutschen geol. Gesell., Jahrg. 1894, pp. 269-280, Pl. XIX, 1894.

Felix (Johannes). Untersuchungen über fossile Hölzer. V. Stück.

Zeitschr. d. Deutschen geol. Gesell., Jahrg. 1896, pp. 249-260, Pl. VI, 1896.

Fontaine (William Morris). The Potomac or younger Mesozoic flora.

Monogr. U. S. Geol. Surv., Vol. XV, pp. i-xiv, 1-377, Pls. I-CLXXX (bound separately), 1889.

— Description of some fossil plants from the Great Falls coal field of Montana.

Proc. U. S. Nat. Mus., Vol. XV, pp. 487-495, Pls. LXXXII-LXXXIV, 1892.

— Notes on some fossil plants from the Trinity division of the Comanche series of Texas.

Proc. U. S. Nat. Mus., Vol. XVI, pp. 261-282, Pls. XXXVI-XLIII, 1893.

— Flora of the Shasta-Chico series.

In Diller (J. S.) and Stanton (T. W.), The Shasta-Chico series: Bull. Geol. Soc. Am., Vol. V, pp. 435-464 (p. 450), 1894.

— Note on plants of Horsetown beds.

In Stanton (T. W.), Contributions to the Cretaceous paleontology of the Pacific coast; the fauna of the Knoxville beds: Bull. U. S. Geol. Surv. No. 133, p. 22, 1895 (1896).

Heer (Oswald). Descriptions of fossil plants from Nebraska.

In Meek (F. B.) and Hayden (F. V.), Remarks on the Lower Cretaceous beds of Kansas and Nebraska, together with descriptions of some new species of Carboniferous fossils from the valley of the Kansas River: Proc. Phila. Acad. Sci., Vol. X, pp. 265, 266, 1858.

— Ueber einige fossile Pflanzen von Vancouver und Britisch-Columbien.

Neue Denkschr. d. allgem. schweiz. Gesell., Vol. XXI, pp. 1-10, Pls. I, II, 1865.

— Miocene Pflanzen des Bankslandes.

Flora fossilis arctica, Vol. I, pp. 134, 135, Pls. XX, XXXV, XXXVI, 1868.

— Miocene Pflanzen vom Mackenzie.

Flora fossilis arctica, Vol. I, pp. 135-139, Pls. XXI-XXIII, 1868.

— Flora Fossilis Alaskana; Fossile Flora von Alaska.

Kongl. svenska Vetenskaps-Akad. Handl., Vol. VIII, No. 4, pp. 1-41, Pls. I-X, 1869 (Flora fossilis arctica, Vol. II, Abth. 2).

— Flora Fossilis Arctica.

Vol. I, 1868. Die fossile Flora der Polarländer, enthaltend die in Nord Grönland, auf der Melville-Insel, im Banksland, am Mackenzie, in Island und in Spitzbergen entdeckten fossilen Pflanzen, pp. 1-192, Pls. I-L. Mit einem Anhang über versteinerte Hölzer der artischen Zone. von Dr. Carl Cramer, pp. 167-180, Pls. XXXIV-XLII.

Vol. II, 1871.

Abth. 1. Fossile Flora der Bären-Insel: Kongl. svenska Vetensk. Akad. Handl., Vol. IX, No. 5, pp. 1-51, Pls. I-XV, 1871.

Abth. 2. Flora Fossilis Alaskana; Fossile Flora von Alaska: Kongl. svenska Vetensk. Akad. Handl., Vol. VIII, No. 4, pp. 1-41, Pls. I-X, 1869.

Abth. 3. Die Miocene Flora und Fauna Spitzbergens: Kongl. svenska Vetensk. Akad. Handl., Vol. VIII, No. 7, pp. 1-98, Pls. I-XVI, 1870.

Heer (Oswald). Flora Fossilis Arctica.

Abth. 4. Contributions to the fossil flora of North Greenland, being a description of the plants collected by Mr. Edward Whymper during the summer of 1867: Phil. Trans, London, Vol. 159, pp. 445-488, Pls. XXXIX-LVI, 1869.

Vol. III, 1874.

Abth. 1. Nachträge zur Miocene flora Grönlands, enthaltend die von der Schwedischen expedition in sommer 1870 gesammelten Miocenen pflanzen: Kongl. svenska Vetensk. Akad. Handl., Vol. XIII, No. 2, pp. 1-29, Pls. I-V, 1874.

Abth. 2. Die Kreide-Flora der arctischen Zone: Kongl. svenska Vetensk. Akad. Handl., Vol. XII, No. 6, pp. 1-138, Pls. I-XXXVIII, 1874.

Vol. IV, 1877.

Abth. 1. Beiträge zur fossilen Flora Spitzbergens: Kongl. svenska Vetensk. Akad. Handl., Vol. XIV, No. 5, pp. 1-141, Pls. I-XXXII, 1876.

Abth. 2. Beiträge zur Jura-Flora Ostsibiriens und des Amurlandes: Mém. Acad. imp. sci. St.-Pétersbourg, 7th series, Vol. XXII, pp. 1-122, Pls. I-XXXI, 1876.

Abth. 3. Ueber die Pflanzen-Versteinerungen von Andö in Norwegen, pp. 1-15, Pls. I, II, 1877.

Vol. V, 1878.

Abth. 1. Die Miocene Flora des Grinnell-Landes, pp. 1-38, Pls. I-IX, 1878.

Abth. 2. Beiträge zur fossilen Flora Sibiriens und des Amurlandes: Mém. Acad. imp. sci. St.-Pétersbourg, 7th series, Vol. XXV, No. 6, pp. 1-58, Pls. I-XV, 1878.

Abth. 3. Primitiae Floræ Fossilis Sachalinensis. Miocene Flora des Insel Sachalin: Mém. Acad. imp. sci. St.-Pétersbourg, 7th series, Vol. XXV, No. 7, pp. 1-61, Pls. I-XV, 1878.

Abth. 4. Beiträge zur Miocenen Flora von Sachalin: Kongl. svenska Vetensk. Akad. Handl., Vol. XV, No. 4, pp. 1-11, Pls. I-IV, 1878.

Abth. 5. Über Fossile Pflanzen von Novaja Semlja: Kongl. svenska Vetensk. Akad. Handl., Vol. XV, No. 3, pp. 1-6, Pl. I, 1878.

Vol. VI, 1882.

Abth. 1.

1. Nachträge zur Jura-Flora Sibiriens: Mém. Acad. imp. sci. St.-Pétersbourg, 7th series, Vol. XXXII, No. 10, pp. 1-34, Pls. I-IX, 1880.

2. Nachträge zur fossilen Flora Grönlands: Kongl. svenska Vetensk. Akad. Handl., Vol. XVIII, No. 2, pp. 1-17, Pls. I-VI, 1880.

3. Beiträge zur Miocenen Flora von Nord-Canada, pp. 1-17, Pls. I-III, 1880.

4. Untersuchung über fossile Hölzer aus der arctischen Zone, von C. Schreöter. pp. 1-38, Pls. I-III, 1880.

Abth. 2. Den ersten Theil der fossilen Flora Grönlands, pp. 1-12, Pls. I-XLVII, 1882.

Vol. VII, 1883. Flora fossilis Grönlandica. Die Fossile Flora Grönlands, pp. 1-275, Pls. XLVIII-CIX, 1883.

Hinde (George Jennings). The glacial and interglacial strata of Scarborough Heights and other localities near Toronto, Ontario.

Canadian Journal (Canadian Institute), new series, Vol. XV, pp. 388-413, 1878. (Plants, p. 399.)

Hitchcock (C. H.). A new species of Carpolithes.

Portland Soc. Nat. Hist., Vol. I, pt. 1, p. 95, Pl. I, fig. 5, 1862.

Hitchcock (Edward). Description of a brown coal deposit in Brandon, Vermont, with an attempt to determine the geological age of the principal hematite ore beds in the United States.

Am. Journ. Sci., 2d series, Vol. X V, pp. 95-104, 1853.

— Fossil fruits [from Brandon, Vermont].

Geology of Vermont, Vol. I, pp. 226-234, text figs. 111-160, 1861.

Hollick (Arthur). The paleontology of the Cretaceous formation on Staten Island.

Trans. N. Y. Acad. Sci., Vol. XI, No. 5, pp. 96-103, Pls. I-IV, 1892.

— Additions to the paleobotany of the Cretaceous formation on Staten Island.

Trans. N. Y. Acad. Sci., Vol. XII, pp. 28-39, Pls. I-III, 1892 (1892-1893).

— Paleobotany of the yellow gravel at Bridgeton, New Jersey.

Bull. Torr. Bot. Club, Vol. XIX, pp. 330-333, 1892.

— Preliminary contribution to our knowledge of the Cretaceous formation on Long Island and eastward.

Trans. N. Y. Acad. Sci., Vol. XI I, pp. 222-237, Pls. V-VII, 1893.

— A new fossil palm from the Cretaceous formation at Glen Cove, Long Island.

Bull. Torr. Bot. Club, Vol. XX, No. 4, pp. 168, 169, Pl. CXLIX, 1893.

— Some further notes upon *Serenopsis Kempii*.

Bull. Torr. Bot. Club, Vol. XX, pp. 334, 335, Pl. CXLVI, 1893.

— Additions to the paleobotany of the Cretaceous formation on Long Island.

Bull. Torr. Bot. Club, Vol. XXI, pp. 49-65, Pls. 174-180, 1894.

— Some further notes on the geology of the north shore of Long Island.

Trans. N. Y. Acad. Sci., Vol. XII II, pp. 122-132, 1894.

— Fossil *Salvinias*, including description of a new species.

Bull. Torr. Bot. Club, Vol. XXI, pp. 253-257, Pl. 205, 1894.

— Winglike appendage on the petioles of *Liriodendron populoides* Lesq., and *Liriodendron alatum* Newb., with description of the latter.

Bull. Torr. Bot. Club, Vol. XXII, No. 11, pp. 467-475, Pls. 220, 221, 1894.

— A new fossil *Nelumbo* from the Laramie group at Florence, Colorado.

Bull. Torr. Bot. Club, Vol. XXII, No. 7, pp. 307-310, text fig., 1894.

— Marthas Vineyard Cretaceous plants.

Bull. Geol. Soc. Am., Vol. VII, pp. 12-14, 1895.

— Descriptions of new leaves from the Cretaceous (Dakota group) of Kansas.

Bull. Torr. Bot. Club, Vol. XXIII, No. 5, pp. 225-228, Pls. 236, 237, 1895.

Hollick (Arthur). New species of leguminous pods from the yellow gravel at Bridgeton, New Jersey.

Bull. Torr. Bot. Club, Vol. XXIII, pp. 46-49, Pls. 258, 259, 1896.

— A new fossil Monocotyledon from the yellow gravel at Bridgeton, N. J.

Bull. Torr. Bot. Club, Vol. XXIV, pp. 229-231, Pls. 311-313, 1897.

— A new fossil grass from Staten Island.

Bull. Torr. Bot. Club, Vol. XXIV, pp. 122-124, Pl. 298, 1897.

— Affinities of *Caulinites* Ad. Brong.

Bull. Torr. Bot. Club, Vol. XXIV, pp. 582, 583, Pl. 320, 1897.

— The Cretaceous clay marl exposure at Cliffwood, New Jersey.

Trans. N. Y. Acad. Sci., Vol. XVI, pp. 124-137, Pls. XI-XIV, March 26, 1897.

Knowlton (F. H.). New species of fossil wood (*Araucarioxylon arizonicum*) from Arizona and New Mexico.

Proc. U. S. Nat. Mus. Vol. XI, pp. 1-4, Pl. I, 1888.

— Description of two new species of fossil coniferous wood from Iowa and Montana.

Proc. U. S. Nat. Mus., Vol. XI, pp. 5-8, Pls. II, III, 1888.

— Description of two species of *Palmoxylon*—one new—from Louisiana.

Proc. U. S. Nat. Mus., Vol. XI, pp. 89-91, Pl. XXX, 1888.

— Description of a new fossil species of the genus *Chara*.

Bot. Gaz., Vol. XIII, No. 6, pp. 156, 157, text figs. 1, 2, 1888.

— Fossil wood and lignite of the Potomac formation.

Bull. U. S. Geol. Survey, No. 56, pp. 1-72, Pls. I-VII, 1889.

— Description of fossil woods and lignites from Arkansas.

Ann. Rept. Geol. Surv. Ark., for 1889, Vol. II, pp. 249-267, Pls. IX-XI, 1890.

— Note on fossil wood.

In Turner (H. W.), The geology of Mount Diablo, California: Bull. Geol. Soc. Am., Vol. II, p. 394, 1891.

— The fossil flora of the Bozeman coal field.

Proc. Biol. Soc. Wash., Vol. VII, pp. 153, 154, 1892.

— Description of a new fossil species of *Chara*.

Bot. Gaz., Vol. XVIII, pp. 141, 142, text figs. 1-3, 1893.

— Notes on a few fossil plants from the Fort Union group of Montana, with a description of one new species.

Proc. U. S. Nat. Mus., Vol. XVI, pp. 33-36, Pls. I, II, 1893.

— Annotated list of the fossil plants of the Bozeman, Montana, coal field, with table of distribution and description of new species.

Bull. U. S. Geol. Surv., No. 105, pp. 43-66, Pls. V, VI, 1893.

Knowlton (F. H.). A review of the fossil flora of Alaska, with descriptions of new species.

Proc. U. S. Nat. Mus., Vol. XVII, pp. 207-240, Pl. IX, 1894.

— A new fossil hepatic from the Lower Yellowstone in Montana.

Bull. Torr. Bot. Club, Vol. XXI, No. 10, pp. 458, 459, Pl. 219, 1894.

— Report on a small collection of fossil plants from old Port Caddo Landing, in Little Cypress Bayou, Harrison County, Texas, made by Mr. T. Wayland Vaughan.

Am. Geol., Vol. XVI, pp. 308, 309, 1895.

— Report upon a small collection of fossil plants from Black Hills, near Belvidere, Kansas, collected by Prof. R. T. Hill in August, 1894.

Am. Journ. Sci., Vol. L, pp. 212-214, 1895.

— Notes on the examination of a collection of interglacial wood from Muir Glacier, Alaska.

Journ. Geol., Vol. III, pp. 527-532, 1 text fig., 1895.

— Description of a new problematical plant from the Cretaceous of Arkansas.

Bull. Torr. Bot. Club, Vol. XXII, No. 9, pp. 387-390, text figs. 1-3, September, 1895.

— American amber-producing tree.

Science, new series, Vol. III, No. 68, pp. 582-584, figs. 1-4, April 17, 1896.

— Description of a supposed new species of fossil wood from Montana.

Bull. Torr. Bot. Club, Vol. XXIII, No. 6, pp. 250, 251, Pl. 271, June, 1896.

— Report on a collection of fossil plants from Morgantown, West Virginia.

In White's (I. C.) Origin of the high terrace deposits of the Monongahela River: Am. Geol., Vol. XVIII, pp. 370-372, 1896.

— The fossil plants of the Payette formation.

Eighteenth Ann. Rept. U. S. Geol. Survey, Part III, pp. 721-744, Pls. XCIX-CII, 1898.

Lesquereux (Leo). On some fossil plants of recent formations.

Am. Journ. Sci., Vol. XXVII, 2d series, pp. 359-366, 1859.

Includes: "Species of fossil plants collected by Dr. John Evans at Naniamo (Vancouver Island) and at Bellingham Bay, Washington Territory;" "Species of fossil plants collected near Somerville, Fayette County, Tennessee, by Prof. J. M. Safford, State geologist;" "Fossil leaves collected in the chalky banks of the Mississippi River near Columbus, Kentucky, by Dr. D. Owen and L. Lesquereux."

— Botanical and palæontological report of the Geological State Survey of Arkansas.

Second report of a geological reconnaissance of Arkansas, by D. D. Owen, pp. 295-319, Pls. I-VI, 1860.

Lesquereux (Leo). Species of fossil plants collected near Somerville, Fayette County, Tennessee, by Dr. J. M. Safford, State geologist of Tennessee.

Geology of Tennessee, pp. 426-428, Pl. K, 1869.

— On the fossil fruits found in connection with the lignites of Brandon, Vermont.

Am. Journ. Sci., Vol. XXXII, 2d series, pp. 355-363, 1861.

— On the fossil fruits found in connection with the lignites of Brandon, Vermont.

Hitchcock's Report on the geology of Vermont, Vol. II, pp. 712-718, 1861.

— Fossil plants from Rock Creek, etc.

In Hayden (F. V.), notes on the lignite deposits of the West: Am. Journ. Sci., Vol. XLV, 2d series, pp. 205-208, 1868.

— On some Cretaceous fossil plants from Nebraska.

Am. Journ. Sci., 2d series, Vol. XLVI, pp. 91-105, 1868.

— On species of fossil plants from the Tertiary of the State of Mississippi; with an Appendix on fossil leaves from Fort Ellsworth, Nebraska (Kansas).

Trans. Am. Phil. Soc., Vol. XIII, pp. 411-433, Pls. XIV-XXIII, 1869.

— I. Enumeration and description of the fossil plants from the specimens obtained in the explorations of Dr. F. V. Hayden, 1870 and 1871. II. Remarks on the Cretaceous species described above. III. Tertiary flora of North America.

Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1871, pp. 283-318, 1872.

— Enumeration and description of fossil plants from the Western Tertiary formations. Description of species of fossil plants from the Cretaceous of Kansas.

Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1872, pp. 371-427, 1873.

— Botanical paleontology of the Tertiary formations of the Rocky Mountains.

Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1873, pp. 366-425, 1874.

— Contributions to the fossil flora of the Western Territories. Part I. The Cretaceous flora.

Rept. U. S. Geol. Surv. Terr., under F. V. Hayden, Vol. VI, pp. 1-136, Pls. I-XXX, 1874.

— On some new species of fossil plants from the Lignite formations.

Bull. U. S. Geol. and Geogr. Surv. Terr., Vol. I, pp. 363-389, 1875 [1876].

— New species of fossil plants from the Cretaceous formation of the Dakota group.

Bull. U. S. Geol. and Geogr. Surv. Terr., Vol. I, pp. 391-400, 1875 [1876].

— On the Tertiary flora of the North American lignitic considered as evidence of the age of the formation.

Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1874, pp. 273-315, 1876.

Lesquereux (Leo). Review of the Cretaceous flora of North America.

Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1874, pp. 316-365, Pls. I-VIII, 1876.

— Contributions to the fossil flora of the Western Territories. Part II. The Tertiary flora.

Rept. U. S. Geol. Surv. Terr., F. V. Hayden, geologist in charge, Vol. VII, pp. 1-366, Pls. I-LXV, 1878.

— List of Amboy clay plants.

Report on the clay deposits of Woodbridge, South Amboy, and other places in New Jersey [Geol. Surv. New Jersey], pp. 28-29, 1878.

— Report on the fossil plants of the auriferous gravel deposits of the Sierra Nevada.

Mem. Mus. Comp. Zoöl. Harvard Coll., Vol. VI, No. 2, pp. 1-62, Pls. I-X, 1878.

— Report of the recent additions of fossil plants to the Museum collections.

Bull. Mus. Comp. Zoöl. Harvard Coll., Vol. VII. No. 6, pp. 225-230, Oct., 1881.

— Contribution to the Miocene flora of Alaska.

Proc. U. S. Nat. Mus., Vol. V, pp. 443-449, Pls. VI-X, 1882 [1883].

— The flora of the Dakota group.

Contributions to the fossil flora of the Western Territories, Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 1-105, Pls. I-XVII, 1883.

— Description of species added to the flora of the Laramie group.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 121-126, Pls. XVIII-XX, 1883.

— The flora of the Green River group.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 127-217, Pls. XXI-XLVa, 1883.

— Description of Miocene species from specimens obtained in the so-called Bad Lands of Dakota.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 221-237, Pls. XLVI-XLIX, 1883.

— Description of Miocene species of California and Oregon.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 239-255, Pls. L-LIX, 1883.

— Contribution to the Miocene flora of Alaska.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 257-263, 1883.

Lesquereux (Leo). Species of plants from the Chalk Bluffs of California.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept.
U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, p. 265, Pl. XLVb,
1883.

- List of recently identified fossil plants belonging to the United States National Museum, with descriptions of several new species.

Proc. U. S. Nat. Mus., Vol. X, pp. 21-46, Pls. I-IV, 1887.

- Recent determinations of fossil plants from Kentucky, Louisiana, Oregon, California, Alaska, Greenland, etc., with descriptions of new species.

Proc. U. S. Nat. Mus., Vol. XI, pp. 11-38, Pls. IV-XVI, 1888.

- The flora of the Dakota group. A posthumous work. Edited by F. H. Knowlton.

Monograph U. S. Geol. Surv., XVII, pp. 15-400, Pls. I-LXVI, 1891 [1892].

- Cretaceous fossil plants from Minnesota.

Final Rept. Geol. and Nat. Hist. Surv., Minnesota, Vol. III, pp. 1-22, Pls. A, B, 1893.

- The genus *Winchellia*.

Am. Geol., Vol. XII, No. 4, pp. 209-213, Pls. VIII, IX, 1893.

McBride (Thomas H.). A new cyad.

Am. Geol., Vol. XII, pp. 248-250, Pl. XI, 1893; also Bull. Lab. Nat. Hist. State Univ. Iowa, Vol. II, No. 4, pp. 391-393, Pl. XII, Nov., 1893.

Newberry (J. S.). Description of fossil plants collected by Mr. George Gibbs. * * *

Boston Journ. Nat. Hist., Vol. VII, pp. 506-524, 1863.

- Notes on the later extinct floras of North America, with descriptions of some new species of fossil plants from the Cretaceous and Tertiary strata.

Annals of the Lyceum of Natural History, Vol. IX, pp. 1-76, 1868.

- Note on plants from lignite beds of Keyport, New Jersey.

Proc. Lyc. Nat. Hist. N. Y., 2d series, Jan. 3 to Mar. 3, 1873, pp. 9, 10, 1873.

- Brief descriptions of fossil plants, chiefly Tertiary, from western North America.

Proc. U. S. Nat. Mus., Vol. V, pp. 502-514, 1882 [1883].

- Description of a species of *Bauhinia* from the Cretaceous clays of New Jersey.

Bull. Torr. Bot. Club, Vol. XIII, No. 5, pp. 77-78, Pl. LVI, fig. 5, 1886.

- The ancestors of the tulip tree.

Bull. Torr. Bot. Club, Vol. XIV, No. 1, pp. 1-7, Pls. LXI, LXII, 1887.

- The flora of the Great Falls coal field, Montana.

Am. Journ. Sci., 3d series, Vol. XLI, pp. 191-201, Pl. XIV, 1891.

Paisley (C. H.). On the post-Pliocene formation near Bathurst, New Brunswick.

Canadian Naturalist, 2d series, Vol. VII, pp. 268-270, 1875.

Penhallow (D. P.). See Dawson (J. W.) and Penhallow (D. P.).

— A new species of *Larix* from the Inter-Glacial of Manitoba.

Am. Geol., Vol. IX, pp. 368-371, June, 1892.

— Note on the specimen of wood referred to in paper on Beluga.

In Dawson (J. W.). Note on a specimen of *Beluga catodon* from the Leda-clay, Montreal: Can. Rec. Sci., Vol. V (for VI), No. 6, p. 354, 1895.

Stanton (T. W.) and Diller (J. S.). See Fontaine (W. M.).

Stanton (T. W.) and Knowlton (F. H.). Stratigraphy and paleontology of the Laramie and related formations in Wyoming.

Bull. Geol. Soc. Am., Vol. VIII, pp. 127-156, 1897.

Ward (L. F.). The ginkgo tree.

Science, Vol. V, No. 124, pp. 495-497, 1885.

— Types of the Laramie flora.

Bull. U. S. Geol. Surv., No. 37, pp. 1-354, Pls. I-LVII, 1887.

— Review of Hollick's "Additions to the palæobotany of the Cretaceous formation on Staten Island."

Am. Journ. Sci., Vol. XLV, Mar. 1893, p. 437, 1893.

— The Cretaceous rim of the Black Hills.

Journ. Geol., Vol. II, No. 3, pp. 250-266, April-May, 1894.

— Fossil cycadean trunks of North America, with a revision of the genus *Cycadeoidea* Buckland.

Proc. Biol. Soc., Washington, Apr. 4, 1894, Vol. IX, pp. 75-88, 1894.

— The Potomac formation.

Fifteenth Ann. Rept. U. S. Geol. Surv. (1893-94), pp. 307-397, Pls. II-IV, 1895.

— Descriptions of the species of *Cycadeoidea*, or fossil cycadean trunks, thus far discovered in the iron-ore belt, Potomac formation of Maryland.

Proc. Biol. Soc., Washington, Mar. 13, 1897, Vol. XI, pp. 1-17, 1897.

CATALOGUE.

ABIES Jussieu. Gen., p. 414, 1789.

Abies balsamea (L.) Mill. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Scarboro Heights, Ontario.

Abies Linkii Rœm.=**Abietites Linkii**.

Abies nevadensis Lx.=**Taxodium distichum miocenum**.

Abies setiger Lx.=**Abietites setiger**.

ABIETITES Hisinger. Lethæa suecica, p. 110, 1837.

Abietites angusticarpus Font. Potomac Fl., p. 263, pl. cxxxiii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Horsetown beds: Shasta County, California.

Abietites californicus Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894. Nomen nudum.

Horsetown beds: Shasta County, California.

Abietites dubius Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 196, 1869 [reprint 1873]; Tert. Fl., p. 81, pl. vii, f. 24 [non f. 20, 21, 21a], 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group: Raton Mountains, New Mexico.

——: Upper Kanab Valley, Utah.

Abietites dubius Lx., Tert. Fl., pl. vi, f. 20, 21, 21a=**Sequoia Reichenbachii**.

Abietites ellipticus Font. Potomac Fl., p. 263, pl. cxxxii, f. 8, 9; cxxxiii, f. 2-4; clxviii, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

Abietites ernestinae Lx. Cret. Fl., p. 49, pl. i, f. 7, 1874.

Pterophyllum Haydenii ex. p. Lx. Am. Journ. Sci., vol. xlv, p. 91, 1868.

Dakota group: Decatur, Nebraska.

Abietites Linkii (Rœm.) Dunk. Monogr. d. Norddeutschen Wealdenb., p. 18, pl. ix, f. 11a-c, 1846; Font., Proc. U. S. Nat. Mus., vol. xvi, p. 268, pl. xxxvii, f. 2, 1893.

Abies Linkii Rœmer. N. deutsch. Oolith-Form. Nachtr., p. 10, pl. xvii, f. 2, 1839.

Trinity division: Glenrose, Texas.

Abietites macrocarpus Font. Potomac Fl., p. 262, pl. cxxxii, f. 7, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Abietites setiger Lx. Tert. Fl., p. 82, pl. vii, f. 17, 18, 1878.

Abies setiger Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873]. Probably rootlets.

Abietites Tyrrellii Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Fort Pierre: Berry Creek, Northwest Territory.

Abietites sp., Font. Proc. U. S. Nat. Mus., vol. xvi, p. 277, pl. xliii, f. 4, 1893.

Trinity division: Glenrose, Texas.

Abietitis sp., Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. 5, p. 450, 1894.

Knoxville beds: Tehama County, California.

ACACIA Adanson. Fam., pl. ii, p. 319, 1763.

Acacia oregoniana Lx. Proc. U. S. Nat. Mus., vol. xi, p. 14, pl. v. f. 4, 1888.

Miocene: John Day Valley, Oregon.

Acacia septentrionalis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874]; Tert. Fl., p. 299, pl. lix, f. 9, 9a, 1878.

Green River group: Castello's ranch, Colorado.

ACACIÆPHYLLUM Fontaine. Potomac Fl., p. 279, 1889.

Acaciæphyllum longifolium Font. Potomac Fl., p. 279, pl. cxxxvii, f. 6; cxxxviii, f. 1-3, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Acaciæphyllum microphyllum Font. Potomac Fl., p. 280, pl. cxxxviii, f. 5, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Acaciæphyllum spatulatum Font. Potomac Fl., p. 280, pl. cxxxviii, f. 4, 6-9, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Acaciæphyllum variabile Font. Potomac Fl., p. 281, pl. clxx, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

ACER (Tournefort) Linnæus. Gen. pl., p. 112, 1737.

Acer æquidentatum Lx. Tert. Fl., p. 262, pl. xlviii, f. 1, 3, 1878; Mem. Mus. Comp. Zoöl. vol. vi, p. 26, pl. vii, f. 4, 5, 1878.

Laramie group?: Carbon, Wyoming.

Miocene: Auriferous gravels, California.

Green River group?: White and Green rivers.

Acer amboyense Newby. Fl. Amboy Clays, p. 106, pl. xlv, f. 5-8, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

Acer arcticum Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 86, pl. xxii; xxiii; xxiv, f. 1, 2; xxv, f. 1-3, 1877; Lesquereux, Mem. Mus. Comp. Zoöl., vol. vi, p. 60, 1878.

Fort Union group: Bad Lands, Dakota.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

Acer Bendirei Lx. Proc. U. S. Nat. Mus., vol. xi, p. 14, pl. v, f. 5; pl. vi, f. 1; pl. vii, f. 1; pl. viii, f. 1, 1888.

Acer trilobatum productum Al. Br. Lesquereux. Cret. and Tert. Fl., 253, p. pl. lix, f. 1-4, 1883.

Miocene: John Day Valley, Oregon.

Miocene: Spanish Ranch, California.

Acer Bolanderi Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 27, pl. vii, f. 7-11, 1878.

Miocene: Table Mountain, California.

Acer dimorphum Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. ix, f. 1, 1888.

Miocene: John Day Valley, Oregon.

Acer gracilescens Lx. Cret. and Tert. Fl., p. 234, pl. xlix, f. 7 (6?), 1883.

Fort Union group: Bad Lands, Dakota.

Acer indivisum Web. Palæontogr., vol. ii, p. 198, pl. xxii, f. 2a, 2b, 1852; Ward, Bull. U. S. Geol. Surv., no. 37, p. 66, pl. xxix, f. 5, 1887.

Laramie group?: Carbon, Wyoming.

Acer indivisum Lx. = *Acer Lesquereuxii*.

Acer Lesquereuxii nom. nov.

Acer indivisum * Lx. Cret. and Tert. Fl., p. 180, pl. xxxvi, f. 6, 9, 1883.

[* *A. indivisum* Lx., 1883. Preoccupied by O. Weber, 1852.]

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

Acer macropterum Heer. Kongl. Vetenskaps-Akad. Föhandl., 1868, p. 68; K. Sv. Vetenskaps-Akad. Handling, vol. viii, no. 4, p. 37, pl. ix, f. 7-9, 1869. [In Fl. Foss. Arct., II, abt. 2, 1871.]

Eocene?: Port Graham, Alaska.

Acer minutus (m). Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. iii, f. 6, 1892.

Cretaceous: Staten Island.

Acer obtusilobum? Ung. Lesquereux [1868] = *Menispermities salinae*.

Acer paucidentatum Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 132, pl. xiv, f. 2, 3, 1897.

Clay marl [Upper Cretaceous]: Cliffwood, New Jersey.

Acer pleistocenicum Penhallow. Bull. Geol. Soc. Am., vol. i, p. 327, f. (in text) 1, 1890.

Pleistocene: Don River, Toronto, Canada.

Acer saccharinum Wang. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 329, 1890.

Acer spicatum Lam. Dn., Can. Nat., vol. iii, new ser., p. 71, 1868; Geol. Hist. Pl., p. 228, 1888. [Not *Acer spicatum* Lam.]

Pleistocene: Greens Creek, Ottawa River, Canada.

Acer saskatchewanense Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 16, 1885 [1886].

Belly River series: Medicine Hat, Northwest Territory.

Acer secreta Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872.] [Not afterwards mentioned by author.]

Laramie?: Evanston, Wyoming.

Acer spicatum Lam. Dn., Can. Nat., vol. iii, new ser., p. 71, 1868 = *A. saccharinum* Wang.

Acer trilobatum? (Sternb.) Al. Br. Neues Jahrb. f. Min. 1845, p. 172, 1845; Lesquereux, Am. Journ. Sci., vol. xxvii, p. 361, 1859; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872].

Phyllites trilobatus Strenbg. Fl. d., Vorwelt, Index Iconum, pl. 1, f. 2, 1825.

—?: Bellingham Bay.

Laramie group: Evanston, Wyoming.

Acer trilobatum productum? (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 50, pl. cxiv, f. 1, 4–8, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 388, 1872 [1873]; Tert. Fl., p. 261, pl. xlviii, f. 2, 3a, 1878.

Acer trilobatum Al. Br. Lx., Ann. Rept., op. cit., p. 408, 1873 [1874].

Denver group?: Sedalia, Colorado.

Laramie group?: Carbon, Wyoming.

Acer trilobatum productum Al. Br. Lx. Cret. and Tert. Fl., p. 258 = *Acer Bendirei*.

Acer trilobatum tricuspidatum (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 49, pl. cxiii, f. 3–10, 1859; Ward, Bull. U. S. Geol. Surv., no. 37, p. 66, pl. xxix, f. 3, 4, 1887.

Acer tricuspidatum Al. Br. Neues Jahrb. f. Min., p. 172, 1845.

Fort Union group: Clear Creek and Little Missouri, Montana.

Acer vitifolium Al. Br. Neues Jahrb. f. Min., 1845, p. 172, 1845; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 44, 1887.

Pleistocene?: Wytheville, Virginia.

Acer, branches of, Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, 1888.

Miocene: John Day Valley, Oregon.

Acer, fruits of, Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. vi, f. 2, 3; pl. vii, f. 2, 1888.

Miocene: John Day Valley, Oregon.

Acer, fruit of, Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 87, f. (in text) 20, 1890.

Eocene?: Stump Lake, British Columbia.

Acer sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 286, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Eocene?: Barrell Springs, Wyoming.

Acer sp., Lx. Cret. and Tert. Fl., p. 181, pl. xxxvi, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

Acer sp., Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 61 (app.), 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

ACERIPHYLLUM Fontaine. Potomac Fl., p. 320, 1889.

Aceriphyllum aralioides Font. Potomac Fl., p. 321, pl. clxiii, f. 8, 1889.

Potomac formation: Virginia.

ACERATES Nilsson. Act. Ac. Holm., p. 345, 1831.

Acerates sp., Hollick in Newby., Fl. Amboy Clays, p. 124, pl. xxxii, f. 17; xli, f. 4, 5, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

ACERITES Viviani. Mem. Soc. Geol. d. France, vol. i, p. 131, 1833.

Acerites menispermifolia Lx. = *Menispermites menispermifolia*.

Acerites multiformis Lx. Fl. Dak. Gr., p. 156, pl. xxxiv, f. 1-9, 1892.

Dakota group: Kansas.

Acerites negundifolium Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 86, f. (in text) 19, 1890.

Eocene?: Stump Lake, British Columbia.

Acerites pristinus Newby. Later Extinct Flora, p. 15, 1868; Ill. Cret. and Tert. Pl., pl. v, f. 4, 1878.

Dakota group: Blackbird Hill, Nebraska.

ACORUS Linneaus. Gen. ed., i, p. 104, 1737.

Acorus affinis Lx. Ann. Rep. U. S. Geol. and Geogr. Surv. Terr., p. 410, 1873 [1874]. [Not afterwards recognized.]

Green River group?: Florissant, Colorado.

Acorus brachystachys Heer. K. Sven. Vetenskaps-Akad. Handl., vol. viii, no. 7, p. 51, pl. viii, f. 7, 8, 1870 [in Fl. Foss. Arct. ii, abt. iii, 1871]; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 288, 1871 [1872]; Tert. Fl., p. 105, pl. xiv, f. 12-15, 1878.

Denver group?: Sedalia, Colorado.

Laramie group?: Carbon, Wyoming.

Acorus calamus L. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River near Columbus, Kentucky.

ACROSTICHOPTERIS Fontaine. Potomac Fl., p. 106, 1889.

Acrostichopteris cyclopteroides Font. Potomac Fl., p. 109, pl. xciv, f. 8, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Acrostichopteris densifolia Font. Potomac Fl., p. 107, pl. xciv, f. 4; clxx, f. 11; clxxi, f. 2, 6; clxxii, f. 13, 1889.

Potomac formation: Baltimore, Maryland; Dutch Gap Canal, Virginia.

Acrostichopteris longipennis Font. Potomac Fl., p. 107, pl. clxx, f. 10; clxxi, f. 1, 5, 7, 1889.

Potomac formation: Baltimore, Maryland.

Acrostichopteris parcelobata Font. Potomac Fl., p. 108, pl. xciv, f. 6, 7, 11, 14, 1889.

Potomac formation: Dutch Gap Canal, and near Potomac Run, Virginia.

Acrostichopteris parvifolia Font. Potomac Fl., p. 108, pl. xciv, f. 5, 9, 10, 12; clxxi, f. 3, 4; clxxii, f. 14, 1889.

Potomac formation: Baltimore, Maryland; Dutch Gap Canal, Trents Reach, Virginia.

ACROSTICHUM Linnæus. Gen. Pl., p. 322, 1737.

Acrostichum crassifolium Font. Potomac Fl., p. 105, pl. xvi, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

Acrostichum hesperium Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Eocene: Green River, Wyoming.

ADIANTITES Göppert. Syst. Filic. Foss., p. 216, 1836.

Adiantites gracillimus Lx. Cret. and Tert. Fl., p. 137, pl. xxi, f. 8, 1883.

Green River group: Florissant, Colorado.

Adiantites Klipsteini (Dunk.) Brongn. = *Glossozamites Klipsteini*.

Adiantites prælongus Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 19, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island, Nanaimo.

ÆSCULOPHYLLUM Dawson. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 149, 1895-96.

Æsculophyllum hastigense Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 149, pl. viii, f. 16, 1895-96.

Eocene: Burrard Inlet, British Columbia.

ÆSCULUS Linnæus. Syst., ed. ii, p. 22, 1740.

Æsculus antiquus Dn. Rept. on Geol. and Res. near Forty-ninth Parallel, appen. A, p. 330, pl. xvi, f. 8, 9, 1875.

Bad Lands: West of Woody Mountain, Canada.

Aleurites eoceneca Lx. = *Grewiopsis eocenica*.

ALIANTHOPHYLLUM Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890 [1891].

Alianthophyllum incertum Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 25, 1890 [1891].

Eocene?: Tranquille River, British Columbia.

ALIANTHUS Desfontaines. Act. Ac. Paris, p. 265, 1786.

Alianthus longe-petiolata Lx. Cret. and Tert. Fl., p. 197, pl. xl, f. 6, 7, 1883.

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

Alianthus ovata Lx. Cret. and Tert. Fl., p. 254, pl. li, f. 7, 8, 1883.

Miocene: Bridge Creek, Oregon.

ALICMACITES Saporta. Ann. sci. nat. Bot., 4th ser., vol. xvii, p. 228, 1862.

Alismacites dakotensis Lx. Fl. Dak. Gr., p. 37, pl. ii, f. 10, 1892.

Dakota group: Kansas.

ALNITES Göppert. De Floribus in Statu Fossili: Nova Acta Acad. Cæs. Leop., vol. xviii, pt. 3, p. 564, p. 20 of reprint, 1837.

Alnites curta Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 86, f. (in text) 18-18c, 1890 [1891].

Eocene?: North Fork Similkameen River, British Columbia.

Alnites crassus Lx. Geol. and Nat. Hist. Survey Minn., vol. iii, p. 13, pl. B, f. 4, 1893.

Dakota group: New Ulm, Minnesota. 1

Alnites grandifolia Newby. Later Extinct Floras, p. 9, 1868; Ills. Cret. and Tert. Fl., pl. iv, f. 2, 1878.

Dakota group: Nebraska.

Alnites inæquilateralis Lx. = *Alnus inæquilateralis*.

Alnites insignis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 38, 1882 [1883].

Upper Cretaceous: Nanaimo.

Mill Creek series: Mill Creek ?.

Alnites quadrangularis Lx. = *Hamamelites quadrangularis*.

ALNUS Gärtner. Fr. and Sem., vol. ii, p. 54, pl. 90, 1791.

Alnus alaskana Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Kootznahoo Archipelago, Alaska.

Alnus carpinifolia Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888. Denver group: Golden, Colorado.

Alnus carpinoides Lx. Cret. and Tert. Fl., p. 243, pl. i, f. 11, pl. li, f. 4, 4a, 5, 1883.

Miocene: Bridge Creek, Oregon.

Alnus cordata Lx. Cret. and Tert. Fl., p. 151, 1883.

Green River group: Florissant, Colorado.

Alnus corrallina Lx. Cret. and Tert. Fl., p. 243, pl. li, f. 1-3, 1883.

Miocene: Corral Hollow, California; John Day Valley, Oregon.

Alnus corylifolia Lx. Proc. U. S. Nat. Mus., vol. v, p. 446, pl. vii, f. 1-4, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Alnus grandiflora Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Alnus Grewiopsis Ward. Bull. U. S. Geol. Surv., no. 37, p. 30, pl. xiv, f. 1, 1887.

Laramie group: Hodges Pass, Wyoming.

Alnus inæquilateralis Lx. Cret. and Tert. Fl., p. 151, 1883.

Alnites inæquilateralis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 381, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 307, 1874 [1876]; Tert. Fl., p. 141, pl. lxii, f. 1-4, 1878.

Green River group: Alkali Station, Wyoming.

Alnus kanseana Lx. = *Hamamelites kansaseanus* = *Quercus kanseana*.

Alnus Kefersteinii (Göpp.) Ung. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872]; Tert. Fl., p. 140, pl. xviii, f. 6-8; lxiv, f. 11, 1878; Heer., Fl. Foss. Alask., p. 28, pl. iii, f. 7, 8, 1869.

Alnites Kefersteinii Göpp. De Floribus in Statu Fossili, p. 564, pl. xli, f. 1-7, 1837.

Eocene?: Alaska.

Miocene: John Day Valley, Oregon; Shasta County, California.

Alnus Kefersteinii (Göpp.) var. Heer. Fl. Foss. Alask.: K. Sv. Vetenskaps-Akad. Handl., vol. viii, No. 4, p. 28, pl. v, f. 9, 1869. [In Fl. Foss. Arct., ii, abt. ii, 1871.]

Eocene?: Port Graham, Alaska.

Alnus rubra Bong. Knowlton. Journ. Geol., vol. iii, p. 532, 1895.

Inter-glacial: Muir Glacier, Alaska.

Alnus rugosa Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

Alnus serrata Newby. Later Extinct Floras, p. 55, 1868.

Fort Union group: Yellowstone River, Montana and Dakota.

Alnus sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Scarboro Heights, Ontario.

AMELANCHIER Medicus. Phil. Bot., i, p. 155, 1789.

Amelanchier canadensis (L.) Medic., var. **rotundifolia** (Mx.) T. & G. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Amelanchier typica Lx. Cret. and Tert. Fl., p. 198, pl. xl, f. 11, 1883.

Green River group: Florissant, Colorado.

Amelanchier typica var. Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 57, 1888.

Denver group: Golden, Colorado.

Amelanchier similis Newby. Later Extinct Floras, p. 48, 1868; Ill. Cret. and Tert. Pl., pl. xxv., f. 6, 1878.

Fort Union group: Yellowstone River, Montana.

Ament of Conifer (a) Font. Potomac Fl., p. 225, pl. cxxxvi, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

Ament of Conifer (b) Font. Potomac Fl., p. 225, pl. cxxxvi, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

Ament of Conifer (c) Font. Potomac Fl., p. 226, pl. cxxxvi, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

Ament of Conifer (d) Font. Potomac Fl., p. 226, pl. cxxxvi, f. 5, 1889.

Potomac formation: Near Cherry Hill Station, Virginia.

Ament of Conifer (e) Font. Potomac Fl., p. 226, pl. cxxxv, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

Ament of Conifer (f) Font. Potomac Fl., p. 227, pl. cxxxvi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

Ament of Angiosperm? Font. Potomac Fl., p. 272, pl. cxxxv, f. 16, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

AMPELOPHYLLUM Lesquereux. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 395, 1875 [1876].

Ampelophyllum attenuatum Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 354, pl. ii, f. 3, 1874 [1876].

Dakota group: Fort Harker, Kansas.

Ampelophyllum firmum Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876].

Dakota group: Kansas.

Ampelophyllum ovatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, 1874 [1876].

Celtis? ovata Lx. Cret. Fl., p. 66, pl. iv, f. 2, 3, 1874.

Populites ovata Lx. Am. Journ. Sci., vol. xlii, p. 94, 1868.

Dakota group: Decatur, Nebraska.

AMPELOPSIS Michaux. Fl. Bor. Am., vol. i, p. 159, 1803.

Ampelopsis tertiaria Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 7, 1871 [1872]; Tert. Fl., p. 242, pl. xliii, f. 1, 1878.

Green River group: Green River Station, Wyoming.

AMYGDALUS (Tournefort) Linnæus. Syst., ed. i, 1735.

Amygdalus gracilis Lx. Cret. and Tert. Fl., p. 199, pl. xl, f. 12-15; pl. xlii, f. 6, 1883.

Green River group: Florissant, Colorado; Uinta County, formerly but wrongly called Randolph County, Wyoming.

ANDROMEDA Linnæus. Syst., ed. i, 1735.

Andromeda acuminata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876].

Dakota group: Kansas.

Andromeda affinis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 348, 1874 [1876]; Cret. and Tert. Fl., p. 60, pl. ii, f. 5, 1883.

Livingston beds: Bozeman coal field.

Laramie group: Bozeman coal field.

——: Las Animas, Colorado.

Andromeda crassa Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.

Miocene: John Day Valley, Oregon.

Andromeda cretacea Lx. Fl. Dak. Gr., p. 117, pl. xvii, f. 17, 18; pl. xxiv, f. 5, 1892.

Dakota group: Kansas.

Andromeda delicatula Lx. Cret. and Tert. Fl., p. 175, pl. xxxiv, f. 10, 11, 1883.

Green River group: Uinta County formerly, but wrongly called Randolph County, Wyoming.

Andromeda dubia Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 428, pl. K, f. 5, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Andromeda flexuosa Newby. Fl. Amboy Clays, p. 121, pl. xxxiv, f. 1-5, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

Andromeda Grayana Heer. Neue Denkschr., vol. xxi, p. 7, pl. i, f. 7-9, 1865; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 271, 1871 [1872]; Tert. Fl., p. 234, pl. xl, f. 4, 1878.

Eocene?: Port Graham, Alaska;? Bozeman coal field, Montana; Burrard Inlet, British Columbia.

Andromeda latifolia Newby. Fl. Amboy Clays, p. 120, pl. xxxiii, f. 6-10; xxxiv, f. 6-11; xxxvi, f. 10, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

Andromeda linearifolia Lx. Proc. U. S. Nat. Mus., vol. x, p. 42, pl. iii, f. 2, 3, 1887.

Denver beds: Silver Cliff, Colorado.

Andromeda linifolia Lx. Fl. Dak. Gr., p. 118, pl. lii, f. 5, 1892.

Dakota group: Kansas.

Andromeda novæ-cæsareæ Hollick in Newby. Fl. Amboy Clays, p. 121, pl. xlii, f. 9-12, 28-31, 1895 [1896].

Amboy clay: New Jersey.

Andromeda Parlatorii Heer. Phyll. Crét. d. Nebr., p. 18, pl. i, f. 5, 1866; Lx., Cret. Fl., p. 88, pl. xxiii, f. 6, 7; pl. xxviii, f. 15; Fl. Dak. Gr., p. 115, pl. xix, f. 1, pl. lii, f. 6, 1892.

Prunus? Parlatorii Lx. Am. Journ. Sci., vol. xvi, p. 102, 1868.

Dakota group: Kansas, Nebraska, and New Ulm, Minnesota.

Cretaceous: Sea Cliff, Long Island.

Amboy clay: New Jersey.

Andromeda Parlatorii longifolia Lx. Fl. Dak. Gr., p. 116, pl. lxiv, f. 19, 1892.

Dakota group: Kansas.

Andromeda Pfaffiana Heer. Fl. Foss. Arct., vol. vi, abt. 2, p. 79, pl. xxv, f. 6; pl. xxxviii, f. 5-7; pl. xlv, f. 12, 1882; Lx., Fl. Dak. Gr., p. 116, pl. xviii, f. 7, 8; pl. lii, f. 7, 1892.

Dakota group: Kansas.

Andromeda protogæa Ung. Denkschr. Wien. Akad., vol. ii, p. 173 [43], pl. xlv, [xxiii], f. 1-9, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Eocene?: Cherry Creek, Oregon.

Andromeda reticulata? Ett. Tert. Fl. Häring: Abhandl. k. k. geol. Reichsan., vol. ii, abt. iii, p. 65, pl. xxii, f. 9, 10, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie?: 6 miles above Spring Canyon, Montana.

Andromeda rhomboidalis Lx. Cret. and Tert. Fl., p. 176, 1883.

Green River group: Florissant, Colorado.

Andromeda Snowii Lx. Fl. Dak. Gr., p. 117, pl. xvii, f. 16, 1892.

Dakota group: Kansas.

- Andromeda tenuinervis** Lx. Fl. Dak. Gr., p. 116, pl. xxxviii, f. 7, 1892.
Dakota group: Kansas.
- Andromeda vacciniifoliæ affinis** Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 428, pl. K. f. 4a, 4b, 1869.
Pleistocene?: Somerville, Fayette County, Tennessee.
- Andromeda Wardiana** Lx. Fl. Dak. Gr., p. 119, pl. lxiv, f. 17, 1892.
Dakota group: Kansas.
- Andromeda** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 9, 1871 [1872]. [Not afterwards mentioned.]
Montana group?: Point of Rocks, Wyoming.
- Andromeda** sp., Lx. Report on Clays in N. J., p. 28, 1878.
Amboy clay: Washington, New Jersey.
- Andromeda** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.
Amboy clay: South Amboy, New Jersey.
- ANEMIA** Swartz. Syn. Fil., p. 155, 1806.
- Anemia stricta** Newby. Fl. Amboy Clays, p. 38, pl. iii, f. 1, 2, 1895 [1896].
Amboy clay: Woodbridge, New Jersey.
- Anemia subcretacea** (Sap.) Gard. and Ett. Monog. Brit. Eoc. Fl., vol. i, pt. ii, p. 45, pl. viii; pl. ix, 1880.
Asplenium subcretaceum Sap. Fl. Foss. Sézanne, Mem. Soc. Géol. France, 3d ser., vol. viii, p. 315, pl. xxiii, f. 4, 1868.
Gymnogramma Haydenii Lx. Ann. Rept. U. S. Geol. and Geog. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 59, pl. iv, f. 1-3, 1878.
? Lathræa arguta Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868.
- Anemia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.
Fort Union: Black Buttes, Wyoming.
- Anemia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.
Fort Union: Lightning Creek, Converse County, Wyoming.
- ANGIOPTERIDIUM** Schimper. Pal. Vég., vol. i, p. 602, 1869.
- Angiopteridium auriculatum** Font. Potomac Fl., p. 113, pl. vii, f. 8-11; xxviii, f. 1, 1889.
Potomac formation: Fredericksburg, Potomac Run, Virginia.
- Angiopteridium canmoreense** Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv., p. 83, f. (in text) 2, 1892.
Kootanie: Canmore, British Columbia.
Knoxville beds: Tehama County, California.
Horsetown beds: Tehama County, California.
- Angiopteridium densinerve** Font. Potomac Fl., p. 115, pl. xxix, f. 4, 1889.
Potomac formation: Fredericksburg, Virginia.
- Angiopteridium dentatum** Font. Potomac Fl., p. 117, pl. xxx, f. 7-8, 1889.
Potomac formation: Fredericksburg, Virginia.
- Angiopteridium ellipticum** Font. Potomac Fl., p. 114, pl. xxix, f. 3, 1889.
Potomac formation: Fredericksburg, Virginia.

Angiopteridium nervosum Font. Potomac Fl., p. 114, pl. xxix, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

Angiopteridium oregonense Font. In Stanton, Bull. U. S. Geol. Surv., no. 133, p. 22, 1895 [1896]. Nomen nudum.

Horsetown beds: Riddles, Oregon.

Angiopteridium ovatum Font. Potomac Fl., p. 115, pl. xxix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

Angiopteridium pachyphyllum Font. Potomac Fl., p. 115, pl. xxix, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Angiopteridium strictinerve Font. Potomac Fl., p. 116, pl. xxix, f. 8, 9, 1889.

Potomac formation: Fredericksburg, Virginia.

Angiopteridium strictinerve latifolium Font. Potomac Fl., p. 116, pl. xxx, f. 1, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

ANISOPHYLLUM Lesquereux. Cret. Fl., p. 98, 1874.

Anisophyllum semialatum Lx. Cret. Fl., p. 98, pl. vi, f. 1-5, 1874.

Quercus semialatus Lx. Am. Journ. Sci., vol. xlv, p. 96, 1868.

Dakota group: Beatrice, Nebraska.

Anisophyllum sp. Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 34, 1882 [1883].

Upper Cretaceous: Baynes Sound.

ANOMALOPHYLLITES Watlet. Descr. Pl. Foss. d. Bassin d. Paris, p. 99, 1866.

Anomalophyllites bridgetonensis Hollick. Bull. Torr. Bot. Club, vol. xxiv, p. 329, pls. 311-313, 1897.

Miocene?: Bridgeton, New Jersey.

ANOMOZAMITES Schimper. Pal. Vég., vol. ii, p. 140, 1870.

Anomozamites acutiloba? Heer. Fl. Foss. Arct., vol. iv, abt. 2, p. 102, pl. xxiii, f. 1a; xxiv, f. 1-3; xxv, f. 9; xxvii, f. 3b, 1876; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 7, 1885 [1886].

Kootanie: Near Canmore, British Columbia.

Anomozamites angustifolius Font. Potomac Fl., p. 167, pl. xxx, f. 2, 3, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

Anomozamites virginicus Font. Potomac Fl., p. 168, pl. xxx, f. 4; xxxi, f. 3, 1889.

Potomac formation: Near Potomac Run and near Telegraph Station, Virginia.

Anomozamites sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, 1892 [1893].

Kootanie: Martin Brook, British Columbia.

ANONA Linnaeus. Syst., ed. i, 1735.

Anona cretacea Lx. Cret. and Tert. Fl., p. 77, 1883.

Dakota group: Glasco, Kansas.

Anona robusta Lx. Cret. and Tert. Fl., p. 124, pl. xx, f. 4, 1883.

Laramie group?: Golden, Colorado.

ANTHOLITHES Brongniart. Mém. d. Mus. d'Hist. Nat., vol. viii, p. 238, 1822.

Antholithes amissus Heer. Fl. Foss. Aret., vol. i, p. 139, pl. xxiii, f. 12, 1868.

Miocene?: Mackenzie River.

Antholithes amoenus Lx. Cret. and Tert. Fl., p. 203, pl. xxxiv, f. 13-15, 1883.

Green River group: Florissant, Colorado.

Antholithes horridus Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, 1885 [1886].

Carpolithes horridus Dn. Trans. op. cit., vol. i, sec. iv, p. 21, pl. i, f. 3, 3a, 3b, 1882 [1883].

Upper Cretaceous: Pine River, Northwest Territory.

Kootanie: North Fork Old Man River, British Columbia.

Antholithes improbus Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 20, 21, 1883.

Green River group: Uinta, formerly erroneously called Randolph County, Wyoming.

Antholithes obtusilobus Lx. Cret. and Tert. Fl., p. 203, pl. xxxii, f. 20, 1883.

Green River group: Florissant, Colorado.

Antholithes sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 82, f. (in text) 11, 1890.

Miocene?: Similkameen Valley, British Columbia.

Antholithus Guadium-Rosæ Ward. Fifteenth Ann. Rept., U. S. Geol. Surv., p. 355, pl. iii, f. 7, 1895.

Potomac formation: Mount Vernon, Virginia.

APEIBOPSIS Heer. Fl. Tert. Helv., iii, p. 37, 1859.

Apeibopsis cyclophylla Lx. Fl. Dak. Gr., p. 180, pl. xxv, f. 6, 1892.

Dakota group: Kansas.

Apeibopsis? discolor Lx. Tert. Fl., p. 259, pl. xlvi, f. 4-7, 1878.

Rhamnus discolor Lx., p. p. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [See *R. discolor*.]

Laramie group: Black Buttes, Wyoming.

Apeibopsis Gaudini Lx. Am. Journ. Sci., vol. xxxii, p. 358, 1861; Geol. Vt., vol. ii, p. 715, 139, 140, 1861.

Brandou, Vermont.

Apeibopsis Heerii Lx. Am. Journ. Sci., vol. xxxii, p. 358, 1861;
Geol. Vt., vol. ii, p. 715, f. 131, 132, 133, 1861.

Brandon, Vermont.

APOCYNOPHYLLUM Unger. Gen. et. Sp. Pl. Foss., p. 433, 1850.

Apocynophyllum Scudderi Lx. Cret. and Tert. Fl., p. 172, pl. xlvA,
f. 1-5, 1883.

Green River group: Alkali Station, Wyoming.

Apocynophyllum sordidum Lx. Fl. Dak. Gr., p. 109, pl. lxiv, f. 11,
1892.

Dakota group: Kansas.

ARALIA (Tournefort) Linnæus. Syst., ed. i, 1735.

Aralia acerifolia Lx. Cret. and Tert. Fl., p. 232, pl. xlix, f. 5, 1883;
op. cit., p. 265, pl. xlvB, f. 1.

Fort Union group: Bad Lands, Dakota.

Miocene: Chalk Bluffs, California.

Aralia angustiloba Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 22,
pl. v, f. 4, 5, 1878.

Miocene: Chalk Bluffs, California.

Aralia berberidifolia Lx. Fl. Dak. Gr., p. 135, pl. xvi. f. 11, 1892.

Dakota group: Kansas.

Aralia concinna Newby. = *Aralia Wellingtoniana*.

Aralia coriacea Vel. Fl. Böhm. Kreideform., Theil iii, p. 11, pl. i [xvi],
f. 1-9; ii [xvii], f. 2, 1884; Hollick, Bull. Geol. Soc. Am., vol. 7, p. 13,
1895.

Cretaceous: Marthas Vineyard.

Aralia concreta Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i,
p. 394 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p.
349, pl. iv, f. 2-4, 1874 [1876].

Aralia semiorbiculata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i,
p. 394, 1875.

Dakota group: Kansas.

Aralia digitata Ward. Bull. U. S. Geol. Surv., no. 37, p. 62, pl.
xxvii, f. 3, 5; pl. xxviii, f. 1, 1887; Lx., Proc. U. S. Nat. Mus., vol. xi,
p. 20, pl. xi, f. 4, 1888.

Fort Union group: Clear Creek, Montana.

Eocene?: Cherry Creek, Oregon.

Aralia dissecta Lx. Cret. and Tert. Fl., p. 176, pl. xxxv, 1883.

Green River group: Florissant, Colorado.

Aralia dubia Font. = *Aralia Fontainei*.

Aralia Fontainei nom. nov.

Aralia dubia * Font. Potomac Fl., p. 314, pl. clvii, f. 1, 7, 1889.

[**Aralia dubia* Font., 1889. Preoccupied by *A. dubia* (Ett.) Sch., Pal. Vég.,
iii, 35, 1874.]

Potomac formation: Deep Bottom, Virginia.

Aralia formosa Heer. Kleide-Flora v. Moletain, p. 18, pl. viii, f. 3, 1869; cf. Lx., Cret. and Tert. Fl., p. 60, pl. xi, f. 3, 4, 1883; Fl. Dak. Gr., p. 131, 1892; Newby., Fl. Amboy Clays, p. 116, pl. xxii, f. 8, 1895 [1896].

Dakota group: Morrison, Colorado.

Amboy clay: South Amboy, New Jersey.

Aralia ? gracilis Lx. Tert. Fl., p. 236, pl. xxxix, f. 1, 1878.

Liquidambar gracilis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872].

Laramie?: Bridgers Pass, Wyoming.

Aralia groenlandica Herr. Fl. Foss. Arct., vol. vi, abt. 2, p. 84, pl. xxxviii, f. 3; xxxix, f. 1; xli f. 16, 17, 1882; Lx., Fl. Dak. Gr., p. 134, pl. liv, f. 1-3, 1892; Newby., Fl. Amboy Clays, p. 116, pl. xxviii, f. 4, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Marthas Vineyard.

Aralia lasseniana Lx. Proc. U. S. Nat. Mus., vol. xi, p. 28, pl. xiv, f. 5, 1888.

Miocene?: Lassen County, California.

Eocene?: Lassen County, California.

Aralia Looziana Sap. and Mar. Mém. Cour. Acad. Roy. de Belgique, vol. xli, p. 77, pl. xiii, f. 1-3, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 6, pl. xxvii, f. 2, 1887.

Fort Union group: Clear Creek, Montana.

Aralia macrophylla Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene: Green River, Wyoming.

Aralia Masoni Lx. Fl. Dak. Gr., p. 133, pl. xv, f. 4, 1892.

Dakota group: Kansas.

Aralia nassauensis Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 55, pl. 174, f. 3, 7, 1894.

Cretaceous: Brooklyn, New York.

Aralia notata Lx. Tert. Fl., p. 237, pl. xxxix, f. 2-4, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 60, pl. xxvii, f. 1; Proc. U. S. Nat. Mus., vol. xi, p. 40, pl. xvii, f. 1, 1888.

Platanus dubia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 406, 1873 [1874].

[*Aralia dubia. Preoccupied by *A. dubia* (Ett.) Sch., Pal. Vég. iii, 35, 1874.]

Denver beds: Mount Bross and Golden, Colorado.

Fort Union group: Elk Creek, Yellowstone National Park; Yellowstone River.

Eocene?: Cherry Creek, Oregon.

Aralia palmata Newby. Fl. Amboy Clays, p. 117, pl. xxxix, f. 6, 7; xl, f. 3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Aralia patens Newby (MSS.). Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. 174, f. 4, 1894; Newby., Fl. Amboy Clays, p. 117, pl. xxxviii, f. 6, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.

Aralia polymorpha Newby. Fl. Amboy Clays, p. 118, pl. xxxix, f. 1-5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Aralia pungens Lx. = *Artocarpus Lessigiana*.

Aralia quinquepartita Lx. Bull. U. S. Geol. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872]; Newby., Fl. Amboy Clays, p. 115, pl. xl, f. 1, 2, 1895 [1896].

Dakota group: Fort Harker, Kansas.

Amboy clay: Woodbridge, New Jersey.

Aralia radiata Lx. Cret. and Tert. Fl., p. 64, pl. vii, f. 2, 3, 1883.

Dakota group: Kansas.

Aralia rotundata Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 5, 1885 [1886].

Mill Creek series: Mill Creek.

Aralia rotundiloba Newby. Fl. Amboy Clays, p. 118, pl. xxviii, f. 5; xxxvi, f. 9, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Aralia Saportana Lx. Bull. U. S. Geol. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 350, pl. i, f. 2, 2a, 1874 [1876]; Cret. and Tert. Fl., p. 61, pl. viii, f. 1, 2; pl. ix, f. 1, 2, 1883.

Dakota group: Kansas.

Aralia Saportana deformata Lx. Fl. Dak. Gr., p. 131, pl. xxiii, f. 1, 2, 1892.

Dakota group: Kansas.

Aralia semiorbiculata Lx. = *Aralia concreta*.

Aralia submarginata Lx. Cret. and Tert. Fl., p. 63, 1883; Fl. Dak. Gr., p. 133, pl. xv, f. 3, 1892.

Dakota group: Kansas.

Aralia tenuinervis Lx. Cret. and Tert. Fl., p. 63, pl. vii, f. 4, 1883.

Dakota group: Kansas.

Aralia Towneri Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 349, pl. iv, f. 1, 1874 [1876]; Cret. and Tert. Fl., p. 62, pl. vi, f. 4, 1883; Fl. Dak. Gr., p. 132, pl. xxiii, f. 3, 4; pl. xxxi, f. 1, 1892.

Dakota group: Kansas.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey (?).

Aralia transversinervia Sap. and Mar. Rev. Fl. Heers. Gelind., p. 79, pl. 12, f. 4; pl. 14, f. 1, 1878; Hollick, Bull. Torr. Bot. Club., vol. xxi, p. 54, pl. 176, f. 1, 1894.

Cretaceous: Oak Neck, Long Island.

Aralia triloba Newby. Later Extinct Floras, p. 58, 1868.

Fort Union group: Fort Clarke.

Aralia tripartita Lx. = *Sterculia tripartita*.

Aralia Wellingtoniana Lx. Fl. Dak. Gr., p. 131, pl. xxi, f. 1; pl. xxii, f. 2, 3, 1892; Newby, Fl. Amboy Clays, p. 114, pl. xxvi, f. 1, 1895 [1896].

Aralia concinna Newby. Fl. Amboy Clays, p. 114, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Aralia Westoni Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 6, 1885 [1886].

Mill Creek series: Mill Creek.

Aralia Whitneyi Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 20. pl. v, f. 1, 1878.

Miocene: Chalk Bluffs, California.

Miocene?: John Day Valley, Oregon.

Aralia Zaddachi? Heer. Mioc. Balt. Fl., p. 89, pl. xv, f. 1b, 1869; Lx., Mem. Mus. Comp. Zoöl., vol. vi, p. 21, pl. v, f. 2, 3, 1878; Cret. and Tert. Fl., p. 263, pl. xlv B, f. 8-9, 1883.

Miocene: Table Mountain, Tulomne County, California.

Aralia sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River.

Aralia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

Aralia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

ARALIÆPHYLLUM Fontaine. Potomac Fl., p. 316, 1889.

Araliæphyllum aceroides Font. Potomac Fl., p. 319, pl. clvi, f. 11; clxii, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

Araliæphyllum acutilobum Font. Potomac Fl., p. 318, pl. clxiii, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

Araliæphyllum magnifolium Font. Potomac Fl., p. 318, pl. clix, f. 9, 10, 1889.

Potomac formation: Near Brooke, Virginia.

Araliæphyllum obtusilobum Font. Potomac Fl., p. 317, pl. clxiii, f. 1, 4; clxiv, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

Araliopsis sp., Lx. Rept. on Clay in N. J., p. 29, 1878 = ?

Amboy clay: Sayreville, New Jersey.

ARAUCARIA Jussieu. Gen. Pl., p. 413, 1789.

Araucaria obtusifolia Font. Potomac Fl., p. 249, pl. lxxxvi, f. 13, 1889.

Potomac formation: Trents Reach, Virginia.

Araucaria podocarpoides Font. Potomac Fl., p. 349, pl. lxxxvi, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

Araucaria spathulata Newby. Later Extinct Floras, p. 10, 1868; Ill. Cret. and Tert. Pl., pl. ii, f. 5, 5a, 1878.

Dakota group?: Sage Creek, Nebraska.

Araucaria zamoides Font. Potomac Fl., p. 250, pl. cxxi, f. 1, 1889.
Potomac formation: Near Potomac Run, Virginia.

ARAUCARIOXYLON Krause in Schimper. Pal. Vég., vol. ii, p. 380, 1872.

Araucarioxylon virginianum Kn. Bull. U. S. Geol. Surv., no. 56, p. 50, pl. vii, f. 2-5, 1888.

Triassic?: Taylorsville, Virginia.

Araucarioxylon sp., Kn. Journ. Geol., vol. ii, p. 260, 1894.
Lower Cretaceous: Black Hills, South Dakota.

ARAUCARITES Presl. in Sternberg Vers., ii, p. 203, 1833.

Araucarites aquiensis Font. Potomac Fl., p. 264, pl. cxxxiii, f. 8-12, 1889.

Potomac formation: Near Brooke, Virginia.

Araucarites ovatus Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 128, pl. xii, f. 3a, 4, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Araucarites virginicus Font. Potomac Fl., p. 263, pl. cxxxiv, f. 7, 1889.

Potomac formation: Trents Reach, Virginia.

ARISÆMA Martius. Flora, vol. xiv, p. 459, 1831.

Arisæma cretacea Lx. Fl. Dak. Gr., p. 38, pl. xlvi, f. 1, 1891.
Dakota group: Kansas.

Arisæma? dubia Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xii, f. 6, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Arisæma? mattewanense Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xii, f. 7, 1897.

Clay Marl (Upper Cretaceous): Cliffwood, New Jersey.

ARISTOLOCHIA (Tournefort) Linnæus. Syst., ed. i, 1735.

Aristolochia cordifolia Newby. Later Extinct Floras, p. 74, 1868.
Fort Union group: Yellowstone River, Montana.

Aristolochia curvata Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 135, 136, 1861.

Brandon, Vermont.

Aristolochia dentata (Heer) Lx. = **Aristolochites dentata**.

Aristolochia obscura Lx. Am. Jour. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 137, 138, 141, 1861.

Brandon, Vermont.

Aristolochia oeningensis Heer. Fl. Tert. Helv., vol. ii, p. 104, pl. c, f. 11b, 1856; Lx., Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 134, 1861.

Brandon, Vermont.

ARISTOLOCHIÆPHYLLUM Fontaine. Potomac Fl., p. 322, 1889.

Aristolochiæphyllum crassinerve Font. Potomac Fl., p. 322, pl. clx, f. 3-6, 1889.

Potomac formation: Near Brooke, Virginia.

ARISTOLOCHITES Heer. Phyll. cré. d. Nebr.: Mém. Soc. helv. d. Sci. Nat., p. 18, 1866.

Aristolochites dentata Heer. Phyll. cré. d. Nebr., p. 18, pl. ii, f. 1, 2, 1866; Lx., Cret. Fl., p. 87, pl. xxx, f. 6, 1874.

Aristolochia dentata Heer. Lesquereux, Crét. and Tert. Fl., p. 59, 1883.

Dakota group: Nebraska.

Aristolochites infundibuliformis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]. [Apparently not afterwards referred to.]

ARTOCARPIDIUM Unger. Foss. Fl. v. Sotzka, p. 36: Denkschr. Wien Akad., vol. ii, p. 254, 1850.

Artocarpidium cretaceum Ett. Kreidefl. v. Niedersch., p. 251, pl. ii, f. 4, 1867; Lx., Fl. Dak. Gr., p. 86, pl. 1, f. 7, 1892.

Dakota group: Kansas.

Artocarpidium olmediaefolium? Heer. = *Celastrinites artocarpidioides*.

ARTOCARPOPHYLLUM Dawson. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, 1893 [1894].

Artocarpophyllum occidentale Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. xii, f. 51; pl. xiii, f. 52, 1893 [1894].

Upper Cretaceous: Vancouver Island.

ARTOCARPUS Forster. Char. Gen., p. 101, 1776.

Artocarpus californica Kn. Science, vol. xxi, p. 24, 1893.

Auriferous gravels: Independence Hill, California.

Artocarpus Lessigiana (Lx.) Kn. Science, vol. xxi, p. 24, 1893.

Myrica? Lessigii Lx. Tert. Fl., p. 136, pl. lxiv, f. 1, 1878.

Myrica? Lessigiana Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 312, 1874 [1876].

Aralia pungens Lx. Cret. and Tert. Fl., p. 123, pl. xix, f. 3, 4, 1883.

Denver group: Golden, Colorado.

Laramie group: Coal Creek and Morrison, Colorado.

Miocene?: John Day Valley, ? Oregon.

ARUNDO (Tournefort) Linnaeus. Gen., ed. i, p. 19, 1737.

Arundo cretaceus Lx. = *Paragmites cretaceus*.

Arundo Göpperti? Münst. in Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 5, 1871 [1872]; Tert. Fl., p. 86, pl. viii, f. 3-5, 1878.

Green River group: Green River, Wyoming.

Denver group: Silver Cliff, Colorado.

Arundo? obtusa Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876]; Tert. Fl., p. 87, pl. viii, f. 9, 9c, 1878.

Denver group: Golden, Colorado.

Arundo reperta Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

Green River group: Green River, Wyoming.

ASIMINA Adanson. Fam. Pl., vol. ii, p. 365, 1763.

Asimina eocenica Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 251, pl. xliii, f. 5-8, 1878.

Denver group: Golden, Colorado.

Laramie group?: Carbon, Wyoming.

Asimina triloba (L.) Don. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 323, 1890; Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Pleistocene: Don River, Toronto.

Miocene?: Bridgeton, New Jersey.

ASPIDIOPHYLLUM Lesquereux. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 361, 1874 [1876].

Aspidiophyllum dentatum Lx. Cret. and Tert. Fl., p. 88, 1883; Fl. Dak. Gr., p. 212, pl. xxxix, f. 1, 1892.

Dakota group: Kansas.

Aspidiophyllum platanifolium Lx. Cret. and Tert. Fl., p. 88, pl. ii, f. 4, 1883.

Dakota group: Clay County, Kansas.

Aspidiophyllum trilobatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 361, pl. ii, f. 1, 2, 1874 [1876]; Cret. and Tert. Fl., p. 87, pl. xii, f. 1; pl. xiii, f. 1-5; pl. xiv, f. 1, 1883.

Dakota group: Kansas.

Aspidium angustipinnatum Font. = *Dryopteris angustipinnata*.

Aspidium angustipinnatum montanense Font. = *Dryopteris angustipinnata montanense*.

Aspidium cystopteroides Font. = *Dryopteris cystopteroides*.

Aspidium dentatum Font. = *Dryopteris dentata*.

Aspidium Dunkeri (Schimp.) Font. = *Cladophlebis Dunkeri*.

Aspidium ellipticum Font. = *Dryopteris elliptica*.

Aspidium "Fisheri" Heer. Lesquereux (1870) = *Lastrea intermedia*.

Aspidium fredericksburgense Font. = *Dryopteris fredericksburgense*.

Aspidium goldianum Lx. = *Lastrea goldiana*.

Aspidium heterophylla Font. = *Dryopteris heterophylla*.

Aspidium Kennerleyi Newby = *Dryopteris Kennerleyi*.
Aspidium Lakesii (Lx.) Kn. = *Dryopteris arguta*.
Aspidium macrocarpum Font. = *Dryopteris macrocarpa*.
Aspidium microcarpum Font. = *Dryopteris microcarpa*.
Aspidium monocarpum Font. = *Dryopteris monocarpa*.
Aspidium montanense Font. = *Dryopteris montanense*.
Aspidium oblongifolium Font. = *Dryopteris oblongifolia*.
Aspidium Erstedii Heer. = *Dryopteris Erstedii*.
Aspidium parvifolium Font. = *Dryopteris parvifolia*.
Aspidium pinnatifidum Font. = *Dryopteris pinnatifida*.
Aspidium pulchellum Heer. Lesquereux (1870) = *Lastrea intermedia*.
Aspidium virginicum Font. = *Dryopteris virginica*.

ASPLENIOPTERIS Fontaine. Potomac Fl., p. 117, 1889.

Aspleniopteris adiantifolia Font. Potomac Fl., p. 118, pl. xvi, f. 6, 1889.

Potomac formation: Fredericksburg, Virginia.

Aspleniopteris pinnatifida Font. Potomac Fl., p. 118, pl. xxii, f. 1-3, 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

ASPLENITES Göppert. Syst. Fil. Foss.: Nova Acta Acad. Cæs. Leop. Nat. Cur., vol. xvii, p. 277, 1836.

Asplenites sp., Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 142, pl. iv, f. 4, 1895-96.

Eocene: Stanley Park, Vancouver, British Columbia.

ASPLENIUM Linnæus. Gen. Pl., p. 322, 1737.

Asplenium (Diplazium) Crossii nom. nov.

Diplazium Mülleri? Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874]; Tert. Fl., p. 55, pl. iv, f. 10, 10a, 1878. [Not *Diplazium Mülleri* Heer.]

Denver group: Golden, Colorado.

Asplenium albertum Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 6, 1885 [1886].

Mill Creek series: Mill Creek.

Asplenium Dicksonianum Heer. Fl. Foss. Arct., vol. iii, pt. 2, p. 31, pl. i, f. 1-5, 1874; Lx., Fl. Dak. Gr., p. 24, pl. i, f. 1, 1a, 1891; Newby, Fl. Amboy Clays, p. 39, pl. i, f. 6, 7; ii, f. 1-8; iii, f. 3, 1896.

Amboy clay: Woodbridge, New Jersey.

Dakota group: Kansas.

Kootanie: Near Canmore; Coal Creek and North Fork Old Man River, British Columbia.

Asplenium (Diplazium) distans Heer. Mém. l'Acad. Imp. d. Sci. St. Pet., series vii, vol. xxii [Beiträge Jura-Fl. Ost-Sib. u. Amurl.], p. 97, pl. xix, f. 5-7, 1876; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, pl. iii, f. 7, 1885 [1886].

Kootanie: Near Canmore, British Columbia.

Asplenium dubium Font. Potomac Fl., p. 109, pl. x, f. 9.

Potomac formation: Fredericksburg, Virginia.

Asplenium erosum (Lx.) n. comb.

Pteris erosa Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872]; Tert. Fl., p. 53, pl. iv, f. 8, 1878; Cret. and Tert. Fl., p. 121, pl. xix, f. 1, 1883.

Denver group: Golden, Colorado, etc.

Asplenium Foersteri Deb. and Ett.? Die urwelt. Acrobryen: (Denkschr. Wien. Akad., vol. xvii, p. 193), p. 13, pl. ii, f. 4-7, 11, 1859; Newby., Fl. Amboy Clays, p. 41, pl. iv, f. 1-11, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

Asplenium martinianum Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, pl. i, f. 1, 1885 [1886].

Kootanie: Martin Creek, Anthracite, and North Fork Old Man River, British Columbia.

Asplenium niobrara Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 20, pl. i, f. 1, 1882 [1883].

Peace River: Northwest Territory.

Asplenium subcretaceum Sap. = *Anemia subcretacea*.

Asplenium tenerum Lx. Cret. and Tert. Fl., p. 221, pl. xlvia, f. 1, 2, 1883.

Fort Union group: Bad Lands, Dakota.

Asplenium subsimplex (Lx.) n. comb.

Pteris subsimplex Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1873 [1874]; Tert. Fl., p. 52, pl. iv, f. 5-7, 1878.

Pteris anceps Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873].

Pteris undulata Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 43, 1888.

Osmunda major Lx. Cret. and Tert. Fl., p. 121, pl. xviii, f. 5, 1883.

Denver group: Golden, Sedalia, Colorado.

Asplenium sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Laramie?: North Fork Dutton Creek, Wyoming.

Asplenium sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

ATHROTAXOPSIS Fontaine. Potomac Fl., p. 239, 1889.

Athrotaxopsis expansa Font. Potomac Fl., p. 241, pl. cxiii, f. 5, 6; cxv, f. 2; cxvi, f. 5; cxvii, f. 6; cxxxv, f. 15, 18, 22, 1889.

Potomac formation: Near Potomac Run, Trents Reach, Dutch Gap Canal, Virginia.

Athrotaxopsis grandis Font. Potomac Fl., p. 240, pl. cxiv, f. 1-3; cxvi, f. 1-4; cxxxv, f. 10, 1889.

Potomac formation: Fredericksburg and near Brooke, Virginia.

Athrotaxopsis pachyphylla Font. Potomac Fl., p. 242, pl. cxv, f. 1, 3; cxvii, f. 1, 3-5, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Athrotaxopsis tenuicaulis Font. Potomac Fl., p. 241, pl. cxiv, f. 4, 5; cxv, f. 4; cxvi, f. 6; cxvii, f. 2, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

AZOLLOPHYLLUM Penhallow. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, 1890 [1891].

Azollophyllum primævum Penhallow in Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, f. 2, 1890.

Miocene?: Stump Lake, Similkameen Valley, British Columbia.

BAIERA Braun. Flora, 1841, p. 33, 1841. [Not seen.]

Baiera brevifolia Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 3, 1891.

Kootanie: Great Falls, Montana.

Baiera foliosa Font. Potomac Fl., p. 213, pl. xciv, f. 13, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Baiera incurvata Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 45, pl. xiii, f. 6, 1882; Newby., Fl. Amboy Clays, p. 60, pl. x, f. 6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Baiera longifolia (Pom.) Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 39, pl. viii, f. 6, 1877; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 5, 1885 [1886].

Dicropteris longifolia Pomel. Bericht d. deutsch. Naturf. Gesell., 1847, p. 339, 1847.

Kootanie: Martin Creek, British Columbia.

BAIEROPSIS Fontaine. Potomac Fl., p. 205, 1889.

Baieropsis adiantifolia Font. Potomac Fl., p. 211, pl. xcii, f. 8, 9; xciii, f. 1-3; xciv, f. 2, 3, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Telegraph Station, Virginia.

Baieropsis adiantifolia minor Font. Potomac Fl., p. 212, pl. xciv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Baieropsis denticulata Font. Potomac Fl., p. 210, pl. xciii, f. 7, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Baieropsis denticulata angustifolia Font. Potomac Fl., p. 210, pl. xcii, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

Baieropsis expansa Font. Potomac Fl., p. 207, pl. lxxxix, f. 1, 3; xci, f. 1; xci, f. 2; xcii, f. 5, 1889.

Potomac formation: Fredericksburg, Dutch Gap Canal, Trents Reach, Virginia.

Baieropsis foliosa Font. Potomac Fl., p. 209, pl. xciii, f. 4-6, 1889.

Potomac formation: Near Brooke, White House Bluff, Virginia.

Baieropsis longifolia Font. Potomac Fl., p. 210, pl. xci, f. 6, 1889.

Potomac formation: Near Telegraph Station, Virginia.

- Baieropsis microphylla** Font. Potomac Fl., p. 212, pl. xc, f. 6, 1889.
Potomac formation: Fredericksburg, Virginia.
- Baieropsis pluripartita** Font. Potomac Fl., p. 208, pl. lxxxix, f. 4; xc, f. 2-5; xci, f. 1, 3, 4, 7; xcii, f. 1, 2, 6, 1889.
Potomac formation: Trents Reach, Dutch Gap Canal, Virginia.
- Baieropsis pluripartita minor** Font. Potomac Fl., p. 208, pl. xci, f. 5; xcii, f. 3, 4, 1889.
Potomac formation: Trents Reach, Dutch Gap Canal, Virginia.
- Baieropsis** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 87, 1892.
Kootanie: Anthracite, British Columbia.
- BANKSIA** Linnæus. f. Suppl., p. 15, 1781.
- Banksia helvetica** Heer. Fl. Tert. Helv., vol. ii. p. 98, 1856; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xvi, f. 6, 1869.
Eolignitic: Mississippi.
- Banksia pusilla** Vel. Fl. Bœhm. Kreidefl., Theil ii, p. 7 [32], pl. i [ix], f. 14-17, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 132, pl. xiii, f. 7, 1897.
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- BANKSITES** Saporta. Études sur la Végétation d. Sud-Est de la France, à l'Époque Tertiaire, pt. i, p. 103, Paris, 1863.
- Banksites lineatus** Lx. Cret. and Tert. Fl., p. 165, pl. xxxii, f. 21, 1883.
Green River group: Florissant, Colorado.
- BAUHINIA** Linnæus. Gen., ed. i, p. 126, 1737.
- Bauhinia cretacea** Newby. Bull. Torr. Bot. Club, vol. xiii, no. 5, p. 77, pl. lvi, 1886; Fl. Amboy Clays, p. 91, pl. xliii, f. 1-4; xliv, f. 1-3, 1895 [1896].
Cretaceous clays: New Jersey.
- Bauhinia ? gigantea** Newby. Fl. Amboy Clays, p. 93, pl. xx, f. 1, 1895 [1896].
Amboy clay: Woodbridge, New Jersey.
- BENNETTITES** Carruthers. Trans. Linn. Soc., London, vol. xxvi, p. 681, 1868.
Bennettites dacotensis McBride = Cycadeoidea dacotensis.
Bennettites sp., Carruthers = Cycadeoidea marylandica.
- BENZOIN** Fabric. Enum. Pl. Hort. Helmst, 1763.
- Benzoin Masoni** (Lx.) n. comb.
Lindera Masoni Lx. Fl. Dak. Gr., p. 96, pl. xviii, f. 9, 10, 1892.
Dakota group: Kansas.
- Benzoin antiquum ?** Heer. Fl. Tert. Helv., vol. ii, p. 81, pl. xc, f. 1-8, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]. [Not later mentioned by Lesquereux.]
— ? : Golden, Colorado.
- Benzoin venustum** (Lx.) n. comb.
Lindera venusta Lx. Fl. Dak. Gr., p. 95, pl. xvi, f. 1, 2, 1892.
Dakota group: Kansas.

BERBERIS (Tournefort) Linnaeus. Gen., ed. i, p. 94, 1737.

Berberis simplex Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

BERCHEMIA Necker. Elem., vol. ii, p. 122, 1790.

Berchemia multinervis (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 77, pl. cxxiii, f. 9-18, 1859; Lx., Tert. Fl., p. 277, pl. lii, f. 9, 10, 1878; Ward, Bull. U. S. Geol. Surv. no. 37, p. 73, pl. xxxiii, f. 1 [non f. 2], 1887.

Rhamnus multinervis Al. Br. In Buckl. Geol., vol. i, p. 513, 1836.

Berchemia parviflora Lx. Am. Journ. Sci., vol. xlv., 2d ser., p. 207, 1868.

Fort Union group: Bull Mountains, Montana.

Denver group: Golden, Sedalia, Colorado.

Laramie group: Raton Mountains, New Mexico ?.

Miocene: John Day Valley, Oregon.

Berchemia multinervis (Al. Br.) Ward=*Rhamnus goldianus*.

Berchemia parvifolia Lx.=*Berchemia multinervis*.

BETULA (Tournefort) Linnaeus. Syst., ed. i, 1735.

Betula aequalis L. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 2., pl. i, f. 2-4, 1878.

Miocene: Chalk Bluffs, California.

Betula alaskana Lx. Proc. U. S. Nat. Mus., vol. v, p. 446, pl. vi, f. 14, 1882 [1883].

Eocene?: Chignik Bay, Alaska.

Betula angustifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Betula basiserrata Ward. Bull. U. S. Geol. Surv. no. 37, p. 32, pl. xiv, f. 4, 1887.

Fort Union group: Seven Mile Creek, Montana.

Betula beatriciana Lx. Am. Journ. Sci., vol. xlv, p. 95, 1868.

Dakota group: Beatrice, Nebraska.

Betula caudata Göpp. Lx.=*Betula Stevensoni* Lx.

Betula coryloides Ward. Bull. U. S. Geol. Surv. no. 37, p. 31, pl. xiv, f. 3, 1887.

Fort Union group: Seven Mile Creek, Montana.

Betula elliptica Sap. Climat et Vég. Tert., p. 160, 1861; Lx., Cret. and Tert. Fl., p. 242, pl. li, f. 6, 1883.

Miocene: John Day Valley, Oregon.

Betula fallax Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

Betula florissanti Lx. Cret. and Tert. Fl., p. 150, pl. xxvii, f. 11, 1883.

Green River group: Florissant, Colorado.

Betula Göpperti Lx.=*Betula Stevensoni*.

Betula gracilis? Ludw. Paleontogr., vol. viii, p. 99, pl. xxxii, f. 3-6, 1861; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874]; Tert. Fl., p. 138, pl. xvii, f. 20, 1878.

Denver group: Golden, Colorado.

Betula grandifolia Ett. Foss. Fl. v. Bilin: Denkschr. Wien. Akad., vol. xxvi, p. 123, pl. xiv, f. 23, 25, 1867; Heer., Fl. Foss. Alaska, p. 29, pl. v, f. 8, 1868.

Eocene?: Port Graham, Alaska.

Betula heterodonta Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Betula lutea? Mx. f. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 70, 1896.

Pleistocene: Besserers Wharf, Ottawa River.

Betula MacClintockii Cramer in Heer. Fl. Foss. Arct., vol. i, p. 174, pl. xxxiv, f. 4a, b; xxxix, f. 1-9, 1868.

Tertiary: Banks Land.

Betula nigra L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

Betula parce-dentata Lx. Cret. and Tert. Fl., p. 242, pl. 1, f. 12, 1883.

Miocene: John Day Valley, Oregon.

Betula perantiqua Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 27, 1882 [1883].

Upper Cretaceous: Baynes Sound, Port McNeill.

Betula prisca Ett. Foss. Fl. v. Wien., p. 11, pl. i, f. 15-17, 1851; Ward, Bull. U. S. Geol. Surv., no. 37, p. 31, pl. xiv, f. 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Eocene?: Alaska.

Betula Schimperi Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

Betula Stevensonii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 139, pl. xviii, f. 1-5, 1878.

Betula Göpperti Lx. Tert. Fl., p. 138, pl. xvii, f. 21-23, 1878.

Betula? *caudata*? Göpp. Lx. Ann. Rept. op. cit., p. 293, 1871 [1872].

Laramie group?: Carbon and Evanston, Wyoming; British Columbia.

Betula truncata Lx. Cret. and Tert. Fl., p. 150, pl. xxviii, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

Betula Vogdesii Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 312, 1874 [1876]; Tert. Fl., p. 137, pl. xvii, f. 18, 19, 1878.

——: Fort Fetterman.

Betula sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Fossil wood.]

Canadian upper Laramie: Souris River.

Betula sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, append. i, p. 68, 1873.

Cretaceous: Vancouver Island, British Columbia.

Betula sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, 1882 [1883].

——: Peace River, Northwest Territory.

- Betula** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.
[Wood.]
Belly River series: Ribstone Creek, Canada.
Fort Pierre series: Swift Current, Canada.
- Betula?** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 30, 1890.
Eocene?: Similkameen Valley, British Columbia.
- Betula** sp., Heer. Fl. Foss. Arct., vol. i, p. 137, pl. xxiii, f. 10, 1868.
Miocene?: Mackenzie River.
- BETULITES** Göppert. De Floribus in Statu Fossili, p. 22, Breslau, 1837.
- Betulites denticulata** Heer. Phyll. cré. d. Nebr., p. 15, pl. iv, f. 5, 6, 1866.
Dakota group: Blackbird Hill, Nebraska.
- Betulites populifolius** Lx. Fl. Dak. Gr., p. 64, pl. vi, f. 1, 2, 1892.
Dakota group: Kansas.
- Betulites rugosus** Lx. Fl. Dak. Gr., p. 65, pl. vi, f. 3-5, 1892.
Dakota group: Kansas.
- Betulites Snowii** Lx. Fl. Dak. Gr., p. 64, pl. v, f. 1-4, 1892.
Dakota group: Kansas.
- Betulites Westii** Lx. Fl. Dak. Gr., p. 60, pl. iv, f. 1-22; pl. v, f. 5-14, 1892.
Dakota group: Kansas.
- Betulites Westii crassus** Lx. Fl. Dak. Gr., p. 63, pl. v, f. 15-17, 1892.
Dakota group: Kansas.
- Betulites Westii cuneatus** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 8, 1892.
Dakota group: Kansas.
- Betulites Westii grewiopsideus** Lx. Fl. Dak. Gr., p. 63, pl. lxiv, f. 10, 1892.
Dakota group: Kansas.
- Betulites Westii inæquilateralis** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 10-13, 1892.
Dakota group: Kansas.
- Betulites Westii lanceolatus** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 14, 1892.
Dakota group: Kansas.
- Betulites Westii latifolius** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 9-11, 1892.
Dakota group: Kansas.
- Betulites Westii multinervis** Lx. Fl. Dak. Gr., p. 62, pl. iv, f. 20-23, 1892.
Dakota group: Kansas.
- Betulites Westii oblongus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 17-19, 1892.
Dakota group: Kansas.
- Betulites Westii obtusus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 5-8, 1892.
Dakota group: Kansas.
- Betulites Westii populoides** Lx. Fl. Dak. Gr., p. 63, 1892.
Dakota group: Kansas.

- Betulites Westii quadratifolius** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 9, 1892.
Dakota group: Kansas.
- Betulites Westii reniformis** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 5, 1892.
Dakota group: Kansas.
- Betulites Westii rhomboidalis** Lx. Fl. Dak. Gr., p. 62, pl. v. f. 6, 7, 1892.
Dakota group: Kansas.
- Betulites Westii rotundatus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 12-16, 1892.
Dakota group: Kansas.
- Betulites Westii subintegrifolius** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 1-4, 1892.
Dakota group: Kansas.
- Betulites**, stipules of, Lx. Fl. Dak. Gr., p. 65, pl. v, f. 18, 1892.
Dakota group: Kansas.
- BLECHNUM** Linnæus. Sp. Pl., ed. ii, p. 1077, 1753.
- Blechnum Göpperti** Ett. Farnkräuter, p. 153, 1865; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 283, 1871 [1872].
[Not afterwards recognized by Lesquereux.]
Green River group?: Henry's Fork.
- BOMBAX** Linnæus. Sp. Pl., ed. i, p. 511, 1753.
- Bombax virginianensis** Font. Potomac Fl., p. 310, pl. cli, f. 4, 1889.
Potomac formation: Near Brooke, Virginia.
- BRACHYPHYLLUM** Brongniart. Prodrome d'une Hist. d. Vég. Foss., Paris, 1828, p. 109.
- Brachyphyllum crassicaule** Font. Potomac Fl., p. 221, pl. c, f. 4; cix, f. 1-7; cx, f. 1-3; cxi, f. 6-7; cxii, f. 6-8; clxviii, f. 9, 1889.
Potomac formation: Trents Reach, near Brooke, and near Dutch Gap Canal, Virginia.
- Brachyphyllum crassum** Lx. = **Brachyphyllum macrocarpum**.
- Brachyphyllum macrocarpum** Newby. Fl. Amboy Clays, p. 51, [foot-note] 1895 [1896].
Brachyphyllum crassum* Lx. Proc. U. S. Nat. Mus., vol. x, p. 34, 1887; Fl. Dak. Gr., p. 32, pl. ii, f. 5, 1891; Newby, Fl. Amboy Clays, p. 51, pl. vii, f. 1-7, 1895 [1896].
Thuites crassus Lx. Cret. and Tert. Fl., p. 32, 1883 [1884].
Brachyphyllum sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 137, 1897.
[* **B. crassum** Lx., antedated by **B. crassum** of Tenison-Woods, 1883.]
Dakota group: Kansas.
Amboy clay: New Jersey.
Montana formation: Harper Station, Wyoming; North Fork Dutton Creek, Wyoming.
Age?: Upper Kanab Valley, Utah.
- Brachyphyllum parceramosum** Font. Potomac Fl., p. 223, pl. cx, f. 4, 1889.
Potomac formation: Near Telegraph Station, Virginia.

Brachyphyllum texense Font. Proc. U. S. Nat. Mus., vol. xvi, p. 269, pl. xxxviii, f. 3-5; pl. xxxix, f. 1, 1a, 1893.

Trinity division: Glenrose, Texas.

Brachyphyllum sp. (Cone) Font. Potomac Fl., p. 224, pl. clxviii, f. 2, 1889.

Potomac formation: Trents Reach, Virginia.

Brachyphyllum sp. (Cone), Font. Potomac Fl., p. 223, pl. cxxxv, f. 8, 1889.

Potomac formation: Trents Reach, Virginia.

Brachyphyllum sp. (Cone), Font. Potomac Fl., p. 224, pl. cxxxv, f. 9, 1889.

Potomac formation: Trents Reach, Virginia.

Brachyphyllum sp. Kn. (1897)=**Brachyphyllum macrocarpum**.

BRASENIA Schreber. Gen Pl., p. 372, 1789.

Brasenia antiqua Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883.]

Eocene: Green River, Wyoming.

Brasenia antiqua Dn.=**Nelumbo Dawsoni**.

Brasenia peltata Pursh. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890.

Pleistocene: Greens Creek, Ottawa.

BROMELIA (Plumier) Linnæus. Syst., ed. i, 1735.

Bromelia? tenuifolia Lx. Fl. Dak. Gr., p. 41, pl. i, f. 13, 1891.

Dakota group: Kansas.

BROMUS Dillenius ex Linnæus. Syst., ed. i, 1735.

Bromus ciliatus L. Penhallow, Bull. Geol. Soc. Am. vol. i., p. 332, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

BRYUM (Dillenius) Linnæus. Gen. Pl., p. 323, 1737.

Bryum sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

BUMELIA Swartz. Prodr. Veg. Ind. Oce., p. 49, 1788.

Bumelia florissanti Lx. Cret. and Tert. Fl., p. 174, pl. xxxiv, f. 4, 5, 1883.

Green River Group: Florissant, Colorado.

Bumelia Marcouana (Heer.) Lx.=**Liriodendron primævum**.

Bumelia? rhomboidea Lx. Fl. Dak. Gr., p. 113, pl. li, f. 10, 1892.

Dakota Group: Kansas.

CABOMBA Aublet. Pl. Gui., vol. i, p. 321, 1775.

Cabomba gracilis Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Fort Union group: Fort Union, North Dakota.

Cabomba grandis Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Fort Union group: Fort Union, North Dakota.

CÆSALPINIA Linnæus. Sp. Pl., p. 380, 1753.

Cæsalpinia Cookiana Hollic in Newby. Fl. Amboy Clays, p. 94, pl. xlii, f. 49, 50, 1895 [1896].

Amboy clay: New Jersey.

Cæsalpinia linearis Lx.=*Mimosites linearifolius*.

CALAMOPSIS Heer. Fl. Tert. Helv., vol. iii, p. 169, 1859.

Calamopsis Danai Lx. Trans. Am. Phil. Soc., vol. xiii, p. 411, pl. xiv, f. 1-3, 1869.

Eolignitic: Mississippi.

Callicoma microphylla? Ett. Lx.=*Myrica drymeja*.

CALLISTEMOPHYLUM Ettingshausen. Tert. Fl. v. Häring in Tirol, p. 83, 1853.

Callistemophyllum Heerii Ett. Sitzb. Wien. Akad., vol. lv, abt. i, p. 261, pl. iii, f. 9, 1867; Lx, Fl. Dak. Gr., p. 138, pl. xxxviii, f. 8, 1892.

Dakota group: Kansas.

Callistemophyllum latum Dn. Trans. Roy. Soc. Canada, vol. vii, sec., iv, p. 72, pl. x, f. 8, 1889.

Miocene?: Mackenzie River.

Callitris? sp., Font. Potomac Fl., p. 272, pl. clxix, f. 8, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

CALYCITHES [**CALYCITES** Auct.] Massalongo. Schizzo Geognostico, p. 72, Verona, 1850.

Calycites diospyrifomis Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 39-41, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Calycites hexaphylla Lx.=*Diospyros Wodani*.

Calycites parvus Newby. Fl. Amboy Clays, p. 131, pl. xlvi, f. 28, 29, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Calycites polycephalus Newby. Later Extinct Floras, p. 31, 1868.

[Not described, figured, or afterwards referred to.]

Calycites sp., Lx. Fl. Dak. Gr., p. 221, pl. xxii, f. 8, 1892.

Dakota group: Kansas.

CAREX (Dillenius) Linnæus. Syst., ed. i, 1735.

Carex aquatilis Whal. Macoun in Coleman, Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

Carex Berthoudi Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]; Tert. Fl., p. 92, pl. ix., f. 3, 4, 1878.

Denver group: Golden, Colorado.

Carex burrardiana Penhallow in Dn. Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 145, pl. iv., f. 6, 1895-96.

Eocene: Burrard Inlet, Vancouver City, British Columbia.

Carex majellanica Lam. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 325, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

Carex servata Heer. Fl. Foss. Alask., p. 24, pl. i, f. 13, 13c, d, 1869.

Eocene?: Port Graham, and Herendeen Bay, Alaska.

Carex utriculata Boott. Macoun in Coleman, Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

Carex vancouverensis Penhallow in Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 144, pl. iv, f. 5, 1895-96.

Eocene: Stanley Park, British Columbia.

CARPINUS Linnæus. Gen., ed. i, p. 292, 1737.

Carpinus attenuata Lx. Cret. and Tert. Fl., p. 152, pl. xxvii, f. 10, 1883.

Green River group: Florissant, Colorado.

Carpinus fraterna Lx. Cret. and Tert. Fl., p. 152, pl. xxvii, f. 12-14, 1883.

Green River group: Florissant, Colorado.

Carpinus grandis Ung. Synop. Pl. Foss., p. 220, 1845; Lx., Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 151?, 1861; Newby, Bost. Journ. Nat. Hist., vol. vii., p. 519, 1863; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 143, pl. xix, f. 9; lxiv, f. 8-10, 1878.

Quercus elkoana Lx. Ann. Rept., p. 413, 1873 [1874].

Miocene: John Day Valley, Oregon.

Eocene: Cook Inlet, Alaska; Stump Lake, British Columbia;

? Brandon, Vermont.

Green River group: Florissant, Colorado; Elko Station, Nevada.

Carpinus pyramidalis (Göpp.) Heer. Fl. Tert. Helv., vol. iii, p. 177, pl. lxxxvii, f. 7b.; cl, f. 27, 28, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 18, 1888.

Miocene: John Day Valley, Oregon.

CARPITES Schimper. Pal. Vég., vol. iii, p. 421, 1874.

Carpites bursæformis Lx. Tert. Fl., p. 306, pl. lx, f. 30, 1878.

Laramie group: Black Buttes, Wyoming.

Carpites cocculoides (Heer.) Lx. Tert. Fl., p. 307, pl. lx, f. 32-35, 1878.

Carpolithes cocculoides Heer. Fl. Foss. Arct., vol. ii, p. 484, pl. lii, f. 9, 1869.

Laramie group?: Carbon, Wyoming.

Carpites cocculoides major Lx. Tert. Fl., p. 307, pl. lx, f. 38, 39, 1878.

Laramie group?: Carbon, Wyoming.

- Carpites coffeæformis** Lx. Tert. Fl., p. 303, pl. lx, f. 6, 7, 1878.
Denver group: Golden, Colorado.
- Carpites coniger** Lx. Fl. Dak. Gr., p. 221, pl. lxii, f. 5, 1892.
Dakota group: Kansas.
- Carpites cordiformis** Lx. Fl. Dak. Gr., p. 220, pl. xxii, f. 9, 1892.
Dakota group: Kansas.
- Carpites costatus** Lx. Tert. Fl., p. 303, pl. lx, f. 5, 1878.
Denver group: Golden, Colorado.
- Carpites fragariæformis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.
Miocene: John Day Valley, Oregon.
- Carpites gemmaceus** Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 19, 1883.
Green River group: Florissant, Colorado.
- Carpites glumæformis** Lx. Tert. Fl., p. 304, pl. xxxv, f. 4d; pl. lx, f. 14-17, 1878.
Laramie group: Black Buttes, Wyoming.
- Carpites laurineus** Lx. Tert. Fl., p. 304, pl. lx, f. 20, 21, 1878.
Laramie group: Golden, Colorado.
- Carpites ligatus** Lx. Tert. Fl., p. 307, pl. lx, f. 36, 36a, 1878.
Laramie group: Placer Mountain, New Mexico.
- Carpites lineatus** (Newby.) Lx. Tert. Fl., p. 302, pl. lx, f. 1-1d, 1878.
Carpolithus lineatus Newby. Later Extinct Floras, p. 31, 1868.
Laramie group?: Evanston, Wyoming.
- Carpites liriophylli** ? Lx. Cret. and Tert. Fl., p. 77, pl. xi, f. 5, 1883.
Dakota group: Morrison, Colorado.
- Carpites milioides** Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 18, 1883.
Green River group: Florissant, Colorado.
- Carpites minutulus** Lx. Tert. Fl., p. 305, pl. lx, f. 25, 1878.
Denver group: Golden, Colorado.
- Carpites mitratus** Lx. Tert. Fl., p. 304, pl. lx, f. 18, 19, 1878.
Laramie group: Black Buttes, Wyoming.
- Carpites oviformis** Lx. Tert. Fl., p. 302, pl. xxx, f. 6a, 1878.
Denver group: Golden, Colorado.
- Carpites Pealei** Lx. Tert. Fl., p. 306, pl. lx, f. 31, 1878.
Green River group: Florissant, Colorado.
- Carpites rhomboidalis** Lx. Tert. Fl., p. 306, pl. lx, f. 28, 29, 1878.
Laramie group: Golden, Colorado.
- Carpites rostellatus** Lx. = Ginkgo.
- Carpites spiralis** Lx. Tert. Fl., p. 306, pl. lx, f. 27, 1878.
Carpolithes spiralis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872].
Laramie group: Placer Mountain, New Mexico.
- Carpites tiliaceus** (Heer.) Lx. Fl. Dak. Gr., p. 221, pl. xxii, f. 6, 7, 1892.
Carpolithes tiliaceus Heer. Mioc. Balt. Fl., p. 101, pl. xxx, f. 42, 43, 1869.
Dakota group: Kansas.

Carpites triangulosus Lx. Tert. Fl., p. 302, pl. lx, f. 4; p. lxxii, f. 19, 20, 1878.

Denver group: Golden, Colorado.

Laramie group?: Black Buttes, Wyoming?; Carbon, Wyoming.

Carpites utahensis Lx. Tert. Fl., p. 305, pl. lx, f. 22, 1878.

Laramie group?: Evanston, Wyoming.

Carpites valvatus Lx. Tert. Fl., p. 307, pl. lx, f. 37, 1878.

Laramie group?: Fort Steele, Wyoming.

Carpites verrucosus Lx. Tert. Fl., p. 305, pl. lx, f. 23, 1878.

Laramie group: Black Buttes, Wyoming.

Carpites Viburni Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 305, pl. lx, f. 26, 26a, 1878.

Laramie group: Black Buttes, Wyoming.

Carpites? sp., Lx. Fl. Dak. Gr., p. 221, 1892.

Carpolithes? Lx. Cret. Fl., p. 114, pl. xxvii, f. 5; pl. xxx, f. 11, 1874.

Dakota group: Kansas?.

CARPOLITHES Schlotheim. Petrefactenkunde, p. 418, 1820.

Carpolithes arachioides Lx.=Leguminosites? arachioides.

Carpolithes brandoniana Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, 1861.

——: Brandon, Vermont.

Carpolithes brandoniana elongata Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 111–113, 1861.

——: Brandon, Vermont.

Carpolithes brandoniana obtusa Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 114–117, 1861.

——: Brandon, Vermont.

Carpolithes bursæformis Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 146, 147, 1861.

——: Brandon, Vermont.

Carpolithes cocculoides? Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 484, pl. lii, f. 9, 9b, 1869; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 290, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Carbon, Wyoming.

Carpolithes compositus Lx.=Palmocarbon compositum.

Carpolithes dentatus Penhallow in Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 26, 1890.

Eocene?: Stump Lake, British Columbia.

Carpolithes falcatus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

Carpolithes fissilis Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 118, 119, 124, 1861.

——: Brandon, Vermont.

Carpolithes Grayana Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861;
Geol. Vt., vol. ii, p. 714, f. 122, 1861.

——: Brandon, Vermont.

Carpolithes horridus Dn. = **Antholithes horridus**.

Carpolithes irregularis Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861;
Geol. Vt., vol. ii, p. 714, f. 120, 121, 123, 125, 128, 1861.

——: Brandon, Vermont.

Carpolithes Lescurii Hitchcock. Portland Soc. Nat. Hist., vol. i, pt. 1, p. 95, pl. i, f. 5, 1862.

——: Brandon, Vermont.

Carpolithes lineatus Newby. Later Extinct Floras, p. 31, 1868; Ill. Cret. and Tert. Pl., pl. xxv, f. 1, 1878; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872].

Laramie group?: Evanston, Wyoming.

Carpolithes (Zamites) meridionalis Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, pl. x, f. 42, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Carpolithes mexicanus Lx. = **Palmocarpon mexicanum**.

Carpolithes osseus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873]. [Not afterwards recognized by its author.]

Eocene?: Elk Creek, Yellowstone National Park.

Carpolithes palmarum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 382, 1872 [1873]. [Not afterwards mentioned by its author.]

——?: Golden, Colorado.

Carpolithes seminulum Heer. Fl. Foss. Arct., vol. i, p. 139, pl. xxiii, f. 11, 1868.

Miocene?: Mackenzie River.

Carpolithes spiralis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Placer Mountain, New Mexico.

Carpolithes Dn. Rept. on Geol. and Res. near 49th Parallel, appen. A, p. 330, 1875.

Lignitic Tertiary: West of Woody Mountain.

Carpolithes venosus? Sternb. Vers., vol. ii, p. 208, pl. 58, f. 18-20, 1833; Lx., Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 159-160, 1861.

——: Brandon, Vermont.

Carpolithes sp., Dn. Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, 1889.

Eocene?: Mackenzie River.

Carpolithes sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 29, 1882 [1883].

Upper Cretaceous: Baynes Sound.

Carpolithes sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874].

Green River group: Near Florissant, Colorado.

Carpolithes sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 15, 1892.

Kootanie: Anthracite, ? British Columbia.

CARPOLITHUS agglomeratus Font. Potomac Fl., p. 267, pl. cxxxiv, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Carpolithus brookensis Font. Potomac Fl., p. 268, pl. cxxxv, f. 2, 4; cxxxvi, f. 6; clxvii, f. 6, 1889.

Potomac formation: Near Brooke and near Dutch Gap Canal, Virginia.

Carpolithus conjugatus Font. Potomac Fl., p. 267, pl. cxxxiv, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

Carpolithus curvatus Font. Potomac Fl., p. 269, pl. cxxxv, f. 17, 1889.

Potomac formation: Fredericksburg, Virginia.

Carpolithus drupæformis Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 134, pl. xi, f. 4, 4a, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Carpolithus fasciculatus Font. Potomac Fl., p. 265, pl. cxxxiv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Carpolithus floribundus Newby. Fl. Amboy Clays, p. 133, pl. xlv, f. 17-21, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Carpolithus geminatus Font. Potomac Fl., p. 267, pl. cxxxiv, f. 10, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Carpolithus Harveyi Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 3, 1893.

Trinity division: Glenrose, Texas.

Carpolithus hirsutus Newby. Fl. Amboy Clays, p. 134, pl. xlv, f. 14, 14a, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Marthas Vineyard.

Carpolithus latus Font. Potomac Fl., p. 269, pl. cxxxv, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Carpolithus mucronatus Font. Potomac Fl., p. 270, pl. cxxxvi, f. 15, 1889.

Potomac formation: Near Brooke, Virginia.

Carpolithus obovatus Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 5, 1893.

Trinity division: Glenrose, Texas.

Carpolithus ovæformis Newby. Fl. Amboy Clays, p. 134, pl. xlv, f. 15, 16, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Carpolithus pruniformis Newby. Fl. Amboy Clays, p. 133, pl. xlvi, f. 42, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Carpolithus sessilis Font. Potomac Fl., p. 269, pl. cxxxvi, f. 9, 1889.
Potomac formation: Near Dutch Gap Canal, Virginia.

Carpolithus spinosus Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Laramie group: Purgatory River, New Mexico.

Carpolithus ternatus Font. Potomac Fl., p. 265, pl. cxxxiv, f. 2-4, 6, 8, 1889.

Potomac formation: Fredericksburg, Virginia.

Carpolithus virginianensis Font. Potomac Fl., p. 266, pl. cxxxiv, f. 11-14; cxxxv, f. 1, 5; clxviii, f. 7, 1889.

Potomac formation: Near Telegraph and Station near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

Carpolithus woodbridgensis Newby. Fl. Amboy Clays, p. 133, pl. xlvi, f. 22, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Carpolithus sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 38, pl. i, f. 12, 1892.

Cretaceous: Kreischerville, Staten Island.

Carya antiquorum Newby. = *Hicoria antiquorum*.

Carya bilinica (Ung.) Ett. = *Hicoria juglandiformis*.

Carya Bruckmani Heer. = *Hicoria Bruckmani*.

Carya elænoides (Ung.) Heer. = *Hicoria elænoides*.

Carya Heerii (Ett.) Heer. Fl. Tert. Helv., vol. iii, p. 93, 1859; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Juglans Heerii Ett. Foss. Fl. v. Tokay: Sitzb. Wien. Akad. vol. xi, p. 35, [811] pl. ii, f. 5-7, 1853.

Green River group?: Green River, Wyoming.?

Carya olivæformis Nutt. Lx. = *Hicoria pecan*.

Carya rostrata (Göpp.) Schimp. = *Hicoria rostrata*.

Carya vermontana Lx. = *Hicoria vermontana*.

Carya verrucosa Lx. = *Hicoria verrucosa*.

Carya sp., Dn. = *Hicoria* sp.

CASSIA (Tournefort) Linnaeus. Syst., ed. i, 1735.

Cassia Fischeri Heer. Fl. Tert. Helv., vol. iii, p. 119, pl. cxxxvii, f. 62-65, 1859; Lx., Cret. and Tert. Fl., p. 202, 1883.

Green River group: Florissant, Colorado.

Cassia concinna? Heer. Fl. Tert. Helv., vol. iii, p. 122, pl. cxxxviii, f. 41, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1872 [1873]; Tert. Fl., p. 299, pl. lix, f. 8, 8a, 1878.

Laramie group: Evanston, Wyoming.

Cassia obtusa Kn. 18th Ann. Rept. U. S. Geol. Surv., pt. iii, p. 731, pl. c, f. 4, 5, 1898.

Payette formation: Marsh, Idaho.

Cassia phaseolites? Ung. Denkschr. Wien. Akad., vol. ii, p. 188, pl. lxxv, f. 1-5; lxxvi, f. 1-9, 1850; Lx, Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.

Miocene: John Day Valley, Oregon.

Cassia polita Lx. Fl. Dak. Gr., p. 146, 1892.

Dakota group: Kansas.

Cassia problematica Lx. Fl. Dak. Gr., p. 146, pl. xxxviii, f. 3, 1892.

Dakota group: Kansas.

CASTALIA Salisbury. In Ann. Bot., vol. ii, p. 71, 1805.

Castalia sp. (Lx.) n. comb.

Nymphaea sp., Lx. Proc. U. S. Nat. Mus., vol. x, p. 45, 1887.

——: "Mouth of Indian Creek."

Castalia sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

Castalia sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

Castalia sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 140, 1897.

Laramie group?: North Fork Dutton Creek, Wyoming.

CASTANEA Adanson. Fam. Pl., vol. ii, p. 375, 1763.

Castanea atavina Ung. Denkschr. Wien. Akad., vol. ii, p. 164, pl. xxxi, f. 5-7, 1850; Lx., Cret. and Tert. Fl., p. 247, pl. li, f. 2, 1883.

Miocene: John Day Valley, Oregon.

Castanea castaneæfolia (Ung.) n. comb.

Fagus castaneæfolia Ung. Chlor. Prot., p. 104, pl. xxviii, f. 1, 1847.

Castanea Ungerii Heer. Phil. Trans., vol. 159, p. 470, pl. xlv, f. 1-3; xlvi, f. 8, 1869; Lx., Cret. and Tert. Fl., p. 246, pl. lii, f. 1, 3-7, 1883.

Miocene?: Corral Hollow, California; John Day Valley, Oregon.

Eocene?: Alaska; Cherry Creek, Oregon; Kamloops, British Columbia.

Castanea intermedia Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 164, pl. xxi, f. 7, 1878.

Green River group: Middle Park, Colorado.

Castanea nana? Elliott. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859 = *Castanea pumila*.

Castanea pumila Miller. Dict. ed. 8, 1768; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Castanea nana? Elliott. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene?: Banks of Mississippi River, near Columbus, Kentucky.

Glacial: Morgantown, West Virginia.

Castanea Ungerii Heer = *Castanea castaneæfolia*.

Castanea sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 27, pl. i, f. 8, 1886 [1887].

Canadian Upper Laramie: Souris River.

Castanea sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.
Miocene?: Bridgeton, New Jersey.

CASTANOPSIS Spach. Hist. Veg. Phan., vol. xi, p. 185, 1842.

Castanopsis chrysophylloides Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 9, pl. ii, f. 10, 1878.

Miocene: Chalk Bluffs, California.

CASUARINA Linnaeus. Amœn. Acad., vol. iv, p. 143, 1759.

Casuarina Covillei Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 353, pl. iii, f. 2, 1895.

Potomac formation: Mount Vernon, Virginia.

CATALPA Scopoli. Introd., p. 170, 1771.

Catalpa crassifolia Newby. Later Extinct Floras, p. 56, 1868.

Canadian upper Laramie: Bow River, Canada.

Fort Union group: Yellowstone River, Montana.

CAUDEX Lesquereux. Cret. and Tert. Fl., p. 91, 1883.

Caudex spinosus Lx. Cret. and Tert. Fl., p. 91, 1883.

Caulinites spinosa Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 422, 1872 [1873].

Dakota group: Kansas.

CAULERPITES (Brongniart) Sternberg. Vers., vol. ii, p. 20, 1833.

[Fucoides § ix. Caulerpites Brongniart, Hist. Vég. Foss., p. 72, 1828.]

Caulerpites fastigiatus Sternb. = *Sequoia fastigiata*.

Caulerpites incrassatus Lx. Tert. Fl., p. 40, pl. i, f. 11, 12, 1878.

Delesseria incrassata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 374, 1872 [1873].

Laramie group: Raton Mountains, New Mexico.

Caulerpites lingulatus (Lx.) n. comb.

Delesseria lingulata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 374, 1872 [1873]; Tert. Fl., p. 41, 1878.

Laramie group: Raton Mountains, New Mexico.

CAULINITES Brongniart. Prod. Hist. Vég. Foss., p. 115, 1828.

Caulinites Beckeri Lx. Proc. U. S. Nat. Mus., vol. x, p. 36, pl. i, f. 3; ii, f. 2-4, 1887.

Pleistocene: Clear Lake, California.

Caulinites fecundus Lx. = *Onoclea fecunda*.

Caulinites sparganioides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]; Tert. Fl., p. 99, pl. xiv, f. 4-11, 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group: Black Buttes, Wyoming.

Caulinites spinosa Lx. = *Caudex spinosus*.

CEANOOTHUS Linnaeus. Act. Soc. Sci. Upsal., p. 77, 1741.

Ceanothus! americanus? L. Lesquereux. Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

Ceanothus cinnamomoides Lx. = *Zizyphus cinnamomoides*.

Ceanothus cretaceous Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 33, 1882 [1883].

Upper Cretaceous: Baynes Sound, Port McNeill, Vancouver Island.

Ceanothus fibrillosus Lx. = **Zizyphus fibrillosus**.

Ceanothus Meigsii Lx. Trans. Am. Phil. Soc., vol. xiii, p. 419, pl. xix, f. 5-7, 1869.

Eolignitic: Mississippi; Lagrange, Tennessee.

Ceanothus? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 84, f. (in text) 14, 1890 [1891].

Eocene?: North Fork Similkameen River, British Columbia.

CEBATHA Forskal. Fl. Ægypt., p. 171, 1775.

Cebatha Haydeniana (Ward) n. comb.

Cocculus Haydenianus Ward. Bull. U. S. Geol. Surv., no. 37, p. 100, pl. xlvii, f. 1-4; pl. xlviii, f. 1, 1887.

Fort Union group: Burns's Ranch and Iron Bluff, Montana.

CEDROXYLON Kraus in Schimp. Trait. Pal. Vég., vol. ii, p. 370, 1870.

Cedroxylon sp., Dn. Rept. on Geol. and Res. near 49th Parallel, appen. A, p. 331, pl. xv, f. 1, 1875.

Lignitic Tertiary: "Forty-ninth parallel."

CELASTRINITES Saporta. Ann. sci. nat. Bot., 5th ser., vol. iii, p. 52, 1865.

Celastrinites ambiguus (Lx.) n. comb.

Celastrinites lævigatus Lx. Tert. Fl., p. 269, pl. xvii, f. 16, 16a, 1878.

Myrica ambigua Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872].

Livingston beds: Bozeman coal field, Montana.

Celastrinites artocarpidioides Lx. Tert. Fl., p. 268, pl. xxxv, f. 3, 1878.

Artocarpidium olmediaefolium? Ung. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv., Terr., p. 400, 1873 [1874].

Denver group: Golden, Colorado.

Celastrinites elegans Lx. Cret. and Tert. Fl., p. 185, pl. xxxi, f. 9, 10, 1883.

Green River group: Florissant, Colorado.

Celastrinites lævigatus Lx. = **Celastrinites ambiguus**.

CELASTROPHYLLUM Göppert. Die Tertiärflorea auf d. Insel Java., 1854, p. 52. [This name was mentioned as a nomen nudum by Göppert in Neues Jahrb., 1853, p. 435.]

Celastrorphyllum acutidens Font. Potomac Fl., p. 305, pl. clvi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

Celastrorphyllum angustifolium Newby. Fl. Amboy Clays, p. 100, pl. xiv, f. 8-17, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Celastrophyllum arcinerve Font. Potomac Fl., p. 304, pl. cxlvi, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

Celastrophyllum Benedeni Sap. and Mar. Essai. Veg. Marnes Heers. Gelind., p. 67, pl. x, f. 6; pl. xii, f. 1, 2, 1874; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. 177, f. 3, 4, 1894.

Cretaceous: Glen Cove, Long Island.

Celastrophyllum brittonianum Hollick in Newby. Fl. Amboy Clays, p. 105, pl. xliii, f. 37, 38, 46, 47, 1895 [1896].

Amboy clay: New Jersey.

Celastrophyllum brookense Font. Potomac Fl., p. 305, pl. clviii, f. 8; clx, f. 7, 1889.

Potomac formation: Virginia.

Celastrophyllum crenatum Heer. Fl. Foss. Arct., vol. vii, p. 41, pl. lxii, f. 21, 1883; Newby., Fl. Amboy Clays, p. 99, pl. xlviii, f. 1-19, 1895 [1896].

Amboy clay: South Amboy, and Sayreville, New Jersey.

Celastrophyllum crassipes Lx. Fl. Dak. Gr., p. 174, pl. lvii, f. 6, 7, 1892.

Dakota group: Kansas.

Celastrophyllum cretaceum Lx. Fl. Dak. Gr., p. 173, pl. xxxviii, f. 12-14, 1892; Newby., Fl. Amboy Clays, p. 100, pl. xlii, f. 13, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

Celastrophyllum decurrens Lx. Fl. Dak. Gr., p. 172, pl. xxxvi, f. 1, 1892.

Dakota group: Kansas.

Celastrophyllum denticulatum Font. Potomac Fl., p. 306, pl. clxix, f. 10; clxxii, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

Celastrophyllum ensifolium Lx. Cret. Fl., p. 108, pl. xxi, f. 2, 3, 1874.

Magnolia ensifolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872].

Dakota group: Southern Kansas.

Celastrophyllum grandifolium Newby. Fl. Amboy Clays, p. 104, pl. xix, f. 8; xxi, f. 1-4, 1895 [1896].

Amboy clay: New Jersey.

Celastrophyllum Hunteri Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 358, pl. iv, f. 9, 1895.

Potomac formation: Mount Vernon, Virginia.

Celastrophyllum latifolium Font. Potomac Fl., p. 306, pl. clxxii, f. 3, 6; clxxiii, f. 13, 1889.

Potomac formation: Baltimore, Maryland.

Celastrophyllum minus Hollick in Newby. Fl. Amboy Clays, p. 105, pl. xlii, f. 51, 52, 1895 [1896].

Amboy clay: New Jersey.

Celastrophyllum myrsinoides Lx. Fl. Dak. Gr., p. 174, pl. lvii, f. 8, 9, 1892.

Dakota group: Kansas.

Celastrophyllum Newberryanum Hollick in Newby. Fl. Amboy Clays, p. 101, pl. xlix, f. 1-27, 1895 [1896]; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiv, f. 1, 1897.

Amboy clay: South Amboy, Sayreville, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Celastrophyllum obliquum Lx. Fl. Dak. Gr., p. 173, pl. lvii, f. 5, 1892.

Dakota group: Kansas.

Celastrophyllum obovatum Font. Potomac Fl., p. 307, pl. clxxii, f. 9, 10, 1889.

Potomac formation: Baltimore, Maryland.

Celastrophyllum obtusidens Font. Potomac Fl., p. 305, pl. clvi, f. 5, 1889.

Potomac formation: Near Brooke, Virginia.

Celastrophyllum proteoides Font. Potomac Fl., p. 304, pl. cxlvi, f. 5, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Celastrophyllum robustum Newby. Fl. Amboy Clays, p. 103, pl. xlii, f. 41, 42, 1895 [1896].

Amboy clay: New Jersey.

Celastrophyllum spatulatum Newby. Fl. Amboy Clays, p. 103, pl. xlii, f. 43-45, 1895 [1896].

Amboy clay: New Jersey.

Celastrophyllum tenuinerve Font. Potomac Fl., p. 306, pl. clxxii, f. 2, 1889.

Potomac formation: Baltimore, Maryland.

Celastrophyllum undulatum Newby. Fl. Amboy Clays, p. 102, pl. xxxviii, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

CELASTRUS Linnaeus. Gen., ed. i, p. 59, 1737.

Celastrus alnifolius Ward. Bull. U. S. Geol. Surv., no. 37, p. 80, pl. xxxv, f. 1, 2, 1887.

Fort Union group: Burns's Ranch, Montana.

Celastrus arctica Heer. Fl. Foss. Arct., vol. vii, p. 40, pl. lxi, f. 5d, 5e, 1883; Newby., Fl. Amboy Clays, p. 98, pl. xiii, f. 8-18, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

Celastrus borealis Heer. Fl. Foss. Alaska, p. 37, pl. x, f. 4, 1869.

Eocene?: Port Graham, Alaska.

Celastrus curvinervis Ward. Bull. U. S. Geol. Surv., no. 37, p. 82, pl. xxxvi, f. 3, 4, 1887.

Fort Union group: Burns's Ranch, Montana.

Celastrus ferrugineus Ward. Bull. U. S. Geol. Surv., no. 37, p. 78, pl. xxxiv, f. 1-4, 1887.

Fort Union group: Burns's Ranch, Iron Bluff, Montana.

Celastrus fraxinifolius Lx. Cret. and Tert. Fl., p. 184, pl. xxxiii, f. 2-4; pl. xl, f. 10, 1883.

Green River group: Florissant, Colorado.

Celastrus Gaudini Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 54, 1883.

Denver group: Golden, Colorado.

Celastrus Greithianus Heer. Fl. Tert. Helv., vol. iii, p. 70, pl. cxxi, f. 63, 1859; Lx., Cret. and Tert. Fl., p. 184, 1883.

Green River group: Florissant, Colorado.

Celastrus grewiopsis Ward. Bull. U. S. Geol. Surv., no. 37, p. 81, pl. xxxvi, f. 2, 1887.

Fort Union group: Burns's Ranch, Montana.

Celastrus Lacoey Lx. Cret. and Tert. Fl., p. 184, 1883.

Green River group: Florissant, Colorado.

Celastrus Lindgreni Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 732, pl. xcix, f. 13; c, f. 6, 1898.

Payette formation: Idaho City, Idaho.

Celastrus ovatus Ward. Bull. U. S. Geol. Surv., no. 37, p. 81, pl. xxxvi, f. 1, 1887.

Fort Union group: Iron Bluff, Montana.

Celastrus pterospermoides Ward. Bull. U. S. Geol. Surv., no. 37, p. 80, pl. xxxv, f. 3-6, 1887.

Fort Union group: Burns's Ranch and Iron Bluff, Montana.

Celastrus Taurinensis Ward. Bull. U. S. Geol. Surv., no. 37, p. 79, pl. xxxiv, f. 5, 6, 1887.

Fort Union group: Bull Mountains; Burns's Ranch, Montana.

Celastrus? sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 38, pl. i, f. 4, 1892.

Cretaceous: Tottenville, Staten Island.

Celastrus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 130, 1897.

Montana formation: Harper, Wyoming.

CELTIS Tournefort ex Linnæus. Gen., ed. i, p. 337, 1737.

Celtis brevifolia Lx. Trans. Am. Phil. Soc., vol. xiii, p. 416, pl. xx, f. 4, 5, 1869.

Eolignitic: Mississippi.

Celtis McCoshii Lx. Cret. and Tert. Fl., p. 163, pl. xxxviii, f. 7, 8, 1883.

Green River group: Florissant, Colorado; Uinta County, formerly but erroneously called Randolph County, Wyoming.

Celtis? ovata Lx. = *Ampelophyllum ovatum*.

Celtis parvifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Bull. 152—5

Celtis rugosa Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].
Tertiary: Tongue River, Wyoming.

CEPHALOTAXOPSIS Fontaine. Potomac Fl., p. 235, 1889.

Cephalotaxopsis brevifolia Font. Potomac Fl., p. 238, pl. cv, f. 3; cvi, f. 5; cvii, f. 5, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal and near Potomac Run, Virginia.

Cephalotaxopsis magnifolia Font. Potomac Fl., p. 336, pl. civ, f. 4, 5; cv, f. 1, 2, 4; cvi, f. 1, 3; cvii, f. 1, 2, 4; cviii, f. 1, 3, 4, 1889.

Horsetown beds: Tehama County, California.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

Cephalotaxopsis microphylla Font. Potomac Fl., p. 238, pl. cviii, f. 5; cix, f. 9, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Cephalotaxopsis ramosa Font. Potomac Fl., p. 237, pl. civ, f. 2, 3; cvi, f. 2, 4; cvii, f. 3; cviii, f. 2, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

Cephalotaxopsis sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 89, 1892 [1893].

Kootanie: Anthracite, British Columbia.

Cephalotaxopsis sp., Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

CERCIS Linnæus. Sp. Pl., ed. i, p. 374, 1753.

Cercis borealis Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Fort Union group: Valley of the Yellowstone River.

Cercis eocenica Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Erie, Colorado.

Cercis parvifolia Lx. Cret. and Tert. Fl., p. 201, pl. xxxi, f. 5-7, 1883.
Green River group: Florissant, Colorado.

Cercis truncata Lx. Cret. and Tert. Fl., p. 237, 1883.

Fort Union group: Bad Lands, Dakota.

CERCOCARPUS Humbolt Bonpland and Kunth Nov. Gen. et Sp., vol. vi, p. 232, 1823.

Cercocarpus antiquus Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 37, pl. x, f. 6-11, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 2, 1883.

Miocene: Table Mountain, California.

CHAMÆCYPARIS Spach. Hist. Vég., Phan., vol. xi, p. 329, 1842.

Chamaecyparis thyoides (L.) B. S. P.

Cupressus thyoides L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 73, 1896.

Pleistocene: New Jersey.

CHARA (Valliant) Linnaeus. Gen. Pl., p. 326, 1737.

Chara compressa Kn. Bot. Gaz., vol. xiii, no. 6, p. 156, f. (in text) 1, 2, 1888.

Eocene: Wales, Utah.

Chara ? glomerata Lx. Cret. and Tert. Fl., p. 135, pl. xxi, f. 12, 1883.

Green River group: Florissant, Colorado.

Chara Stantonii Kn. Bot. Gaz., vol. xviii, no. 4, p. 141, f. (in text) 1-3 1893.

Bear River formation: Cookeville, Utah.

Chara sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

CHIROPTERIS Kurr in Bronn: Neues Jahrb. f. Min. 1858, p. 143, 1858.

Chiropteris spatulata Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 1, 2, 1891.

Kootanie: Great Falls, Montana.

Chiropteris Williamsii Newby. Am. Journ. Sci., vol. xli, p. 198, pl. xiv, f. 10, 11, 1891.

Kootanie: Great Falls, Montana.

CHONDRITES Sternberg. Vers., vol. ii, p. 25, 1833.

Chondrites bulbosus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 42, pl. i, f. 14, 1878.

Laramie group: Raton Mountains, New Mexico.

Chondrites flexuosus Newby. Fl. Amboy Clays, p. 34, pl. i, f. 1, 4, 1895 [1896].

Amboy clay: New Jersey.

Chondrites Heerii Eichwald. Geognost.-Palæontolog. Bemerk. ii. Halbinsell. Mangischlak und Aleut.-Inseln., p. 111, pl. iv, f. 1, 1871.

Chondrites sp., Heer. Fl. Foss. Alask., p. 21, pl. x, f. 5, 1869.

Eocene?: Kachemak Bay, Alaska.

Chondrites subsimplex Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 41, pl. i, f. 13, 1878.

Laramie group: Raton Mountains, New Mexico.

Chondrites sp., Heer=*Chondrites Heerii*.

CHONDROPHYLLUM Necker. Elem. Bot., iii, p. 347, 1790.

Chondrophyllum Nordenskiöldi Heer=*Hedera ovalis*?

Condrophyllum obovatum Newby. Fl. Amboy Clays, p. 118, pl. xlii, f. 26, 27, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Chondrophyllum orbiculatum Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 115, pl. xxxi, f. 3c; xxxii, f. 13, 1874; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. ii, f. 2b, 1892.

Cretaceous: Staten Island.

Chondrophyllum orbiculatum Heer. Referred by Lesquereux to *Hedera orbiculata* (Heer) Lx.

Chondrophyllum reticulatum Hollick. In Newby, Fl. Amboy Clays, p. 119, pl. xli, f. 6, 7, 1895 [1896].

Amboy clay: New Jersey.

CINCHONIDIUM, Unger. Gen. et Sp. Plant. Foss., p. 430, 1850.

Cinchonidium ovale Lx. Cret. and Tert. Fl., p. 229, pl. xlviii, f. 8-10b, 1883.

Fort Union group: Bad Lands, Dakota.

CINNAMOMUM Blume. Bijdr., 568.

Cinnamomum affine Lx. Am. Journ. Sci., vol. xlv, p. 206, 1869; Tert. Fl., p. 219, pl. xxxvii, f. 1-5, 7, 1878.

Cinnamomum mississippiense Lx. Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xix, f. 2, 1869.

Cinnamomum polymorphum Al. Br. Lx. Tert. Fl., p. 221, pl. xxxvii, f. 6 [non f. 10], 1878.

Cinnamomum Rossmässleri Heer in Lx. Ann. Rept. op. cit., p. 379, 1872 [1873]; Tert. Fl., p. 221, 1878.

Montana group: Coalville, Utah.

Denver beds: Golden?, South Park, Colorado.

Laramie group: Durango, Marshalls, Colorado; ? Raton Mountains, New Mexico; Black Buttes, Wyoming; ? Carbon, Wyoming; Corral Hollow, California.

Cinnamomum affine Lx. Ward, Bull. U. S. Geol. Surv., no. 37, p. 50, pl. xxiv, f. 3-5, 1887. [Non Lx.] = *Ficus* sp.

Laramie group: Black Buttes, Wyoming.

Cinnamomum canadense Dn. Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 13, pl. iv, f. 7, 1885 [1886].

Mill Creek series: Mill Creek?

Cinnamomum crassipes Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Bellingham Bay.

Cinnamomum ellipsoideum Sap. and Mar. Mém. l'Acad. Roy. d. Belgique, vol. xli, p. 61, pl. ix, f. 7-9, 1878; Lx., Fl. Dak. Gr., p. 105, pl. li, f. 8, 9, 1892.

Dakota group: Kansas.

Cinnamomum ellipticum Kn. Bull. U. S. Geol. Surv., no. 105, p. 54, 1893.

Cinnamomum polymorphum Al. Br. Lx. Tert. Fl., p. 221, pl. xxxvii, f. 10 [non f. 6, which = *C. affine*, q. v.], 1878.

Livingston beds: Bozeman coal field, Montana.

Cinnamomum Heerii Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859; Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 12, 1869; Cret. Fl., p. 84, pl. xxviii, f. 11, 1874; Cret. and Tert. Fl., p. 54; Fl. Dak. Gr., p. 105, pl. xv, f. 1, 1892.

Daphnogene Heerii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 343, 1874 [1876].

Dakota group: Kansas.

———?: Nanaimo.

Amboy clay?: South Amboy, New Jersey.?

Cinnamomum intermedium Newby. Fl. Amboy Clays, p. 89, pl. xxix, f. 1-8, 10, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

Cinnamomum lanceolatum? (Ung.) Heer. Fl. Tert. Helv., vol. ii, p. 86, pl. xciii, f. 6-11, 1856; Lx., Tert. Fl., p. 219, pl. xxxvi, f. 12, 1878. [Non Ward, Bull. U. S. Geol. Surv., no. 37, p. 49, pl. xxiv, f. 2, 1887.]

Daphnogene lanceolata Ung. Gen. et Sp., p. 424, 1850.

Laramie group: Evanston, Wyoming?

———: Upper Kanab Valley, Utah.

Cinnamomum lanceolatum (Ung.) Heer. Ward = **Cinnamomum Wardii**.

Cinnamomum Marionii Lx. Fl. Dak. Gr., p. 106, pl. li, f. 6, 7, 1892.

Dakota group: Kansas.

Cinnamomum mississippiense Lx. = **Cinnamomum affine**.

Cinnamomum novæ-angliæ Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 148, 1861.

———? Brandon, Vermont.

Cinnamomum polymorphum = **Cinnamomum affine**.

Cinnamomum polymorphum = **Cinnamomum ellipticum**.

Cinnamomum Rossmässleri = **Cinnamomum affine**.

Cinnamomum Scheuchzeri Heer. Fl. Tert. Helv., vol. ii, p. 85, pl. xci, f. 4-22; pl. xcii; pl. xciii, f. 1, 5, 1856; Lx., Cret. Fl., p. 83, pl. xxx, f. 2, 3, 1874; Tert. Fl., p. 220, pl. xxxviii, f. 8, 1878; Fl. Dak. Gr., p. 104, pl. xi, f. 4, 1892.

Daphnogene cretacea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 343, 1874 [1876].

Laramie group: Bozeman coal field, Montana.

Dakota group: Kansas; New Ulm, Minnesota.

Eocene?: Lassen County, California.

Cinnamomum sezannense Watlet. Pl. Foss. d. Bassin d. Paris, p. 175, pl. 50, f. 2, 1866; Lx., Fl. Dak. Gr., p. 107, pl. xii, f. 6, 7, 1892.

Dakota group: Kansas.

Cretaceous: Glen Cove and Sea Cliff, Long Island; Port McNeill, Vancouver Island.

Cinnamomum Wardii nom. nov.

Cinnamomum lanceolatum (Ung.) Heer. Ward, Bull. U. S. Geol. Surv., no. 37, p. 49, pl. xxiv, f. 2, 1887. [Non Lx.]

Laramie group: Hodges Pass, Wyoming.

Cinnamomum? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 84, f. (in text) 15, 1890.

Eocene: North Fork Similkameen River, British Columbia.

Cinnamomum sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Cinnamomum sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

CISSITES Heer. Phyll. Crét. d. Nebraska, p. 19, Zürich, 1866.

Cissites acerifolius Lx. Fl. Dak. Gr., p. 163, pl. lviii, f. 1, 1892.

Dakota group: Kansas.

Cissites acuminatus Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, pl. viii, f. 1, 1874 [1876].

Dakota group: Fort Harker, Kansas.

Cissites acutiloba Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 227, pl. 237, f. 3, 1895.

Dakota group: Fort Harker, Kansas.

Cissites affinis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 352, 1874 [1876]; Cret. and Tert. Fl., p. 67, 1883.

Platanus affinis Lx. Cret. Fl., p. 71, pl. iv, f. 4, 1874.

Populites affinis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

Dakota group: Salina Valley, Kansas.

Mill Creek series: Mill Creek; North Fork Old Man River.

Cissites affinis ampla (Dn.) n. comb.

Platanus affinis ampla Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 12, 1885 [1886].

Mill Creek series: Mill Creek.

Cissites alatus Lx. Fl. Dak. Gr., p. 160, pl. xxiii, f. 6, 1892.

Dakota group: Kansas.

Cissites Brownii Lx. Fl. Dak. Gr., p. 162, pl. xviii, f. 11, 1892.

Dakota group: Kansas and Minnesota.

Cissites crispus Vel.? Fl. Böhm. Kreidefl., pt. iv, p. 12 [73], pl. iv [xxvii], f. 6, 1885; Newby., Fl. Amboy Clays, p. 108, pl. xlii, f. 20-23, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Cissites cyclophylla Lx. = *Populites cyclophyllus*.

Cissites dentato-lobatus Lx. Fl. Dak. Gr., p. 164, pl. lxvi, f. 4, 1892.

Dakota group: Kansas.

Cissites formosus Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 85, pl. xxi, f. 5-8, 1882; Lx., Fl. Dak. Gr., p. 161, pl. xxi, f. 5, 1892; Newby., Fl. Amboy Clays, p. 107, pl. xlvii, f. 1-8, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Dorosis Island, Glen Cove, Long Island.

Cissites harkerianus Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 352, pl. vii, f. 1, 2, 1874 [1876].

Sassafras (Araliopsis) harkerianum Lx. Cret. Fl., p. 81, pl. xi, f. 3, 4; pl. xxvii, f. 2, 1874.

Sassafras harkeriana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873].

Dakota group: Kansas.

Cissites Heerii Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, pl. vi, f. 3, 1874 [1876].

Dakota group: Fort Harker, Kansas.

Cissites ingens Lx. Fl. Dak. Gr., p. 159, pl. xix, f. 2, 2a, 1892.

Dakota group: Kansas.

Cissites ingens parvifolia Lx. Fl. Dak. Gr., p. 160, pl. lvii, f. 3, 4, 1892.

Dakota group: Kansas.

Cissites insignis Heer. Phyll. Crét. d. Nebr., p. 19, pl. ii, f. 3, 4, 1866.

Dakota group: Tekamah, Nebraska.

Cissites microphyllus Lx. Proc. U. S. Nat. Mus., vol. x, p. 44, pl. iii, f. 11, 1887.

Pleistocene?: Clear Lake, California.

Cissites obtusilobus Lx. Fl. Dak. Gr., p. 161, pl. xxxiii, f. 5, 1892.

Dakota group: Kansas.

Cissites obtusum Lx. = **Cissites salisburiaefolius**.

Cissites platanoidea Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 226, pl. 237, f. 2, 1895.

Dakota group: Fort Harker, Kansas.

Cissites populoides Lx. Fl. Dak. Gr., p. 162, pl. xviii, f. 12-14, 1892.

Dakota group: Kansas.

Cissites salisburiaefolius Lx. Cret. and Tert. Fl., p. 66, 1883.

Populites salisburiaefolius Lx. Am. Journ. Sci., vol. xlvi, p. 94, 1868.

Sassafras obtusum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

Cissites obtusum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 354, 1874 [1876].

Dakota group: Kansas and Nebraska.

CISSUS Linnaeus. Diss. Dass., p. 6, 1747.

Cissus Browniana Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 17, pl. A, f. 8, 1893.

Dakota group: New Ulm, Minnesota.

Cissus corylifolia Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 52, 1888.

Denver group: Golden, Colorado.

Cissus duplicato-serrata Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 52, 1888.

Denver group: Golden, Colorado.

Cissus lævigata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 238, pl. xl, f. 12, 13, 1878.

Denver beds: Golden, Colorado.

Arapahoe beds?: Sedalia, Colorado.

Cissus lobato-crenata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873]; Tert. Fl., p. 240, pl. xli, f. 1-3, 1878.

Denver group: Golden, Mount Cross, Colorado.

Laramie group: Black Buttes, Wyoming.

Cissus parrottiaefolia Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 314, 1874 [1876]; Tert. Fl., p. 239, pl. xl, f. 15-17; pl. xlii, f. 1, 1878.

Denver beds: Golden, Colorado.

Green River group?: Medicine Bow, Wyoming.

Cissus tricuspidata (Heer) Lx. Tert. Fl., p. 240, pl. xli, f. 4-7, 1878.

Vitis (Cissus) tricuspidata Heer. Mioc. Balt. Fl., p. 91, pl. xxviii, f. 18, 19, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873].

Laramie group: Black Buttes, Wyoming.

CLADOPHLEBIS Brongniart. Tab. des genres de vég. foss., p. 25, 1849.

Cladophlebis acuta Font. Potomac Fl., p. 74, pl. v, f. 7: pl. vii, f. 6; pl. x, f. 6, 7; pl. xi, f. 7, 8; pl. clxvi, f. 5, 1889.

Potomac formation: Potomac Run, and Dutch Gap Canal, Virginia.

Cladophlebis alata Font. Potomac Fl., p. 77, pl. xix, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis angustifolia Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 8, 1891.

Kootanie: Great Falls, Montana.

Cladophlebis brevipennis Font. Potomac Fl., p. 81, pl. xxxvi, f. 1.

Potomac formation: Fishing hut above Dutch Gap Canal, Virginia.

Cladophlebis Browniana (Dunk.) Seward. Cat. Mesoz. Pl. Brit.

Mus. Wealden Fl., pt. i, p. 99, 1894.

Pecopteris Browniana Dunk. Wealdenbildung, p. 5, 1846; Font., Potomac Fl., p. 88, pl. xxii, f. 10, 11; xxiii, f. 2-7; xxvi, f. 3, 13, 1889; Proc. U. S. Nat. Mus., vol. xv, p. 492, 1892; Dn., Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 84, f. (in text) 3, 1892 [1893].

Potomac formation: Fredericksburg, Dutch Gap Canal, and near Brooke, Virginia; Baltimore, Maryland.

Kootanie: Great Falls, Montana; Anthracite, British Columbia.

Cladophlebis columbiana Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 55, pl. v, f. 4, 5, 1893 [1894].

Cretaceous: Vancouver Island.

Cladophlebis constricta Font. Potomac Fl., p. 68, pl. ii, f. 11; pl. iii, f. 2; pl. vi, f. 5, 6, 8-14; pl. xxi, f. 9, 13; pl. clxix, f. 2, 1889.

Kootanie: Great Falls, Montana.

Potomac formation: Fredericksburg, Brooke Station, and Deep Bottom, Virginia; Baltimore, Maryland.

Cladophlebis crenata Font. Potomac Fl., p. 75, pl. ix, f. 7-9; pl. x, f. 1, 2; pl. xiii, f. 1-3; pl. xix, f. 1; pl. xx, f. 6, 1889.

Potomac formation: Fredericksburg, Brooke Station, and Potomac Run, Virginia.

Cladophlebis denticulata Font. Potomac Fl., p. 71, pl. iv, f. 2; pl. vii, f. 7, 1889.

Potomac formation: Fredericksburg and Potomac Run, Virginia.

Cladophlebis distans Font. Potomac Fl., p. 77, pl. xiii, f. 4, 5, 1889.

Potomac Fl.: Near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

Cladophlebis Dunkeri (Schimp.) Seward. Cat. Mesoz. Pl. Brit. Mus. Wealden Fl., pt. 1, p. 100, 1894.

Pecopteris Dunkeri Schimp. Pal. Vég., vol. i, p. 539, 1869.

Aspidium Dunkeri (Schimp.) Font. Potomac Fl., p. 101, pl. xxii, f. 9; xxv, f. 11, 12; xxvi, f. 2, 8, 9, 18; liv, f. 3, 9, 1889.

Potomac formation: Telegraph Station, Dutch Gap Canal, and Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

Cladophlebis falcata Font. Potomac Fl., p. 72, pl. iv, f. 8; pl. v, f. 1-6; vi, f. 7; pl. vii, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Kootanie: Anthracite, British Columbia.

Cladophlebis heterophylla Font. Proc. U. S. Nat. Mus., vol. xv, p. 493, pl. lxxxiv, f. 2, 1892.

Kootanie: Great Falls, Montana.

Cladophlebis inaequiloba Font. Potomac Fl., p. 80, pl. xxv, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis inclinata Font. Potomac Fl., p. 76, pl. x, f. 3, 4; pl. xx, f. 8, 1889.

Potomac formation: Telegraph station, Virginia.

Knoxville beds: Tehama County, California.

Cladophlebis latifolia Font. Potomac Fl., p. 69, pl. iii, f. 1; pl. vi, f. 4, 1889.

Potomac formation: Baltimore, Maryland.

Cladophlebis oblongifolia Font. Potomac Fl., p. 74, pl. vii, f. 3-5, 1889.

Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.

Cladophlebis pachyphylla Font. Potomac Fl., p. 80, pl. xxv, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis parva Font. Potomac Fl., p. 73, pl. iv, f. 7; pl. vi, f. 1-3, 1889.

Potomac formation: Fredericksburg, Virginia.

Kootanie: Great Falls, Montana.

Cladophlebis petiolata Font. Potomac Fl., p. 80, pl. xxii, f. 8, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Cladophlebis rotundata Font. Potomac Fl., p. 78, pl. xx, f. 9, 10, 1889.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis sphenopteroides Font. Potomac Fl., p. 79, pl. xxi, f. 4, 1889.

Fishing hut above Dutch Gap Canal, Virginia.

Cladophlebis virginensis Font. Potomac Fl., p. 70, pl. iii, f. 3-8; pl. iv, f. 1, 3-6, 1889.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis sp.? Font. Potomac Fl., p. 76, pl. x, f. 5, 8; pl. xx, f. 7, 1889.

Potomac formation: Fredericksburg and Potomac Run, Virginia.

Cladophlebis sp., Font. Potomac Fl., p. 77, pl. xv, f. 6; pl. xix, f. 3, 1889.

Potomac formation: Potomac Run, and near Brooke Station, Virginia.

Cladophlebis sp., Font. Potomac Fl., p. 78, pl. xix, f. 2, 1889.

Potomac formation: Telegraph station, Virginia.

Cladophlebis sp., Font. Potomac Fl., p. 81, pl. xxvi, f. 15.

Potomac formation: Fredericksburg, Virginia.

Cladophlebis sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv., p. 85, 1892.

Kootanie: Anthracite, British Columbia.

Clathropodium mirabile (Lx.) Ward = *Cycadeoidea mirabilis*.

CLETHRA Gronovius ex Linnæus. Syst., ed. i, 1735.

Clethra alnifolia L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

COCOLOBA Linnæus. Syst., ed. x, p. 1007, 1759.

Cocoloba lævigata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 208, pl. xxxv, f. 7, 1878.

Laramie group?: Carbon, Wyoming.

Cocculus De Candolle. Syst., Veg. V, i, p. 515 = *Cebatha*.

Cocculus Haydenianus Ward = *Cebatha* Haydeniana.

COLUTEA (Tournefort) Linnæus. Syst., ed. i, 1735.

Colutea Boweniana Lx. Cret. and Tert. Fl., p. 255, pl. lvii, f. 4, 1883.

Miocene?: Bowen claim, California.

Colutea primordialis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 99, pl. xxvii, f. 7-11; lxiii, f. 78, 1882; Lx., Fl. Dak. Gr., p. 148, pl. xiii, f. 8, 9, 1892; Newby., Fl. Amboy Clays, p. 97, pl. xix, f. 4, 5, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Eatons Neck, Long Island.

COMPTONIA Banks. Gärtn. Fr. and Sem., vol. ii, p. 58, pl. xc, 1791.
Comptonia columbiana Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 81, f. (in text) 10, 1890.

Miocene?: North Similkamen and Kamloops, British Columbia.

Comptonia cuspidata Lx. = *Myrica cuspidata*.

Comptonia premissa Lx. = *Myrica premissa*.

CONE of *Pinus*? sp., Font. Potomac Fl., p. 272, pl. clxx, f. 4, 1889.

Potomac formation: Baltimore, Maryland.

CONOSPERMITES Etttingshausen. Sitzb. Wien. Akad., vol. lv, abt. i, p. 254, 1867.

Conospermities ellipticus Font. Potomac Fl., p. 279, pl. cxxxviii, f. 14, 1889.

Potomac formation: Near Potomac Run, Virginia.

Cordia? *tiliæfolia* Al. Br. = *Ficus tiliæfolia*.

CORNOPHYLLUM Newberry. Fl. Amboy Clays, p. 119, 1895 [1896].

Cornophyllum vetustum Newby. Fl. Amboy Clays, p. 119, pl. xix, f. 10, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

CORNUS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Cornus acuminata Newby. = *Cornus Newberryi*.

Cornus Emmonsii Ward = *Cornus impressa*.

Cornus ferox Ung. Gen. et Sp. Pl. Foss., p. 441, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 21, 1888.

Eocene?: Cherry Creek, Oregon.

? **Cornus Fosteri** Ward. Bull. U. S. Geol. Surv., no. 37, p. 54, pl. xxv, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Cornus Holmesii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1873 [1874]. [Not afterwards recognized.]

Laramie group?: Coal Creek, Colorado.

Cornus hyperborea Herr. Fl. Foss. Arct., vol. ii, abt. iv, p. 476, pl. l, f. 3, 4, 1869; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 29, pl. xv, f. 3, 1888.

Eocene?: Lassen County, California.

Denver beds: Mount Bross, Middle Park; North Denver, Colorado.

Laramie group? (upper beds): Point of Rocks, Wyoming.

Cornus impressa Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 408, 1873 [1874]; Tert. Fl., p. 243, pl. xlii, f. 3, 1878.

Cornus Emmonsii Ward. Bull. U. S. Geol. Surv., no. 37, p. 55, pl. xxvi, f. 2, 3, 1887.

Cornus incompletus Lx. Am. Jour. Sci., vol. xlv, p. 206, 1868. [Not afterwards referred to by its author.]

Laramie group: Marshalls, Colorado.

Cornus Kelloggii Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 23, pl. vi, f. 3, 1878.

Miocene: Chalk Bluffs, California.

Cornus Newberryi Hollick. nom. nov. MSS.

Cornus acuminata * Newby. Later Extinct Floras, p. 71, 1868; Ill., pl. xx, f. 2-4, 1878.

[* *Cornus acuminata* Newby. 1868. Preoccupied by *C. acuminata* O. Weber, Paleontogr., ii, p. 192. 1852.]

Cornus obesus Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. ix, f. 30, 1893 [1894].

Upper Cretaceous: Vancouver Colliery, Vancouver Island.

Cornus orbifera Heer = *Cornus suborbifera*.

Cornus ovalis Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 23, pl. vi, f. 1, 2, 1878.

Miocene: Table Mountain, California.

Cornus platyphylloides Lx. Fl. Dak. Gr., p. 126, pl. lxiv, f. 15, 1892.

Dakota group: Kansas.

Cornus præcox Lx. Fl. Dak. Gr., p. 125, pl. xxiii, f. 5, 1892.

Dakota group: Kansas.

Cornus rhamnifolia O. Web. Paleontogr., vol. ii, p. 192, pl. iv, f. 8, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 9, 1871 [1872]; Tert. Fl., p. 244, pl. lxii, f. 6, 1878.

Laramie group: Bozeman coal field, Montana.

Montana formation: Point of Rocks, Wyoming.

Cornus Stüderi ? Heer. Fl. Tert. Helv., vol. iii, p. 27, pl. cv, f. 18-21, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 244, pl. xlii, f. 4, 5, 1878.

Denver beds: Golden, Colorado.

Montana formation: Point of Rocks, Wyoming.

Cornus suborbifera Lx. Tert. Fl., p. 243, pl. xlii, f. 2, 1878.

Cornus orbifera Heer, Lx. Ann. Rept., op. cit., p. 402, 1873 [1874].

Eocene?: Cook Inlet, Alaska.

Laramie group: Golden, Colorado.

Cornus sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Greenville, New Jersey.

CORYLUS (Tournefort) Linnaeus. Syst., ed. i, 1735.**Corylus americana** Walt. Flora Caroliniana, p. 236, 1788; Newby., Later Extinct Floras, p. 59, 1868.

Fort Union group: Seven-Mile Creek, Montana; Fort Union, Dakota.

Canadian Upper Laramie: Porcupine Creek.

Corylus Fosteri Ward. Bull. U. S. Geol. Surv., no. 37, p. 29, pl. xiii, f. 5, 6, 1887.

Fort Union group: Clear Creek, Montana.

Corylus grandifolia Newby. Later Extinct Floras, p. 59, 1868.

Fort Union group: Fort Union, Dakota.

Corylus MacQuarrii (Forbes) Heer. *Urwelt d. Schweiz*, p. 321, 1865.
Alnites? M'Quarrii Forbes. *Quat. Journ. Geol. Soc.*, vol. vii, p. 103, pl. iv, f. 3, 1851.

Eocene?: Alaska, Mackenzie River.

Fort Union: Montana; Porcupine Creek, British Columbia.

Laramie group?: Carbon, Wyoming.

Corylus MacQuarrii macrophylla Heer. *Fl. Foss. Arct.*, vol. i, p. 105, 1868; vol. ii, abt. ii (*Fl. Foss. Alask.*), p. 30, pl. iv, f. 6, 7, 1869.
Eocene?: Alaska.

Corylus orbiculata Newby. *Later Extinct Floras*, p. 58, 1868.

Fort Union group: Fort Union, Dakota.

Corylus rostrata Ait. *Hort. Kew.*, vol. iii, p. 364, 1789; Newby., *Later Extinct Floras*, p. 60, 1868.

Fort Union group: Seven-Mile Creek, Montana; Fort Union, Dakota.

Canadian Upper Laramie: Porcupine Creek.

CRATÆGUS (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

Cratægus acerifolia Lx. *Cret. and Tert. Fl.*, p. 198, pl. xxxvi, f. 10, 1883.

Green River group: Florissant, Colorado.

Cratægus aceroides Lx. *Fl. Dak. Gr.*, p. 143, pl. liv, f. 8; pl. lv, f. 1, 1892.

Dakota group: Kansas.

Cratægus ? æquidentata Lx. *Tert. Fl.*, p. 297, pl. lviii, f. 4, 4a, 1878.

Laramie group?: Carbon, Wyoming.

Cratægus antiqua Heer. *Fl. Foss. Arct.*, vol. i, p. 125, pl. i, f. 1, 2, 1868; Lx., *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 57, 1888.

Denver group: Golden, Colorado.

Cratægus atavina Heer. *Fl. Foss. Arct.*, vol. vii, p. 43, pl. lxiv, f. 11, 1883; Lx., *Geol. and Nat. Hist. Surv. Minn.*, vol. iii, p. 20, pl. B, f. 8, 1893.

Dakota group: New Ulm, Minn.

Cratægus betulæfolia Lx. *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

Cratægus Engelhardti Lx. *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

Cratægus flavescens Newby. *Proc. U. S. Nat. Mus.*, vol. v, p. 507, 1882 [1883].

Myrica diversifolia Lx. *Cret. and Tert. Fl.*, p. 148, pl. xxv, f. 6-15, 1883.

Miocene?: Bridge Creek, John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Cratægus Holmesii Lx. *Proc. U. S. Nat. Mus.*, vol. x, p. 43, pl. iii, f. 7-9, 1887.

Denver group: Silver Cliff, Colorado.

- Cratægus Lacoëi** Lx. Fl. Dak. Gr., p. 143, pl. lxiv, f. 14, 1892.
Dakota group: Kansas.
- Cratægus lawrenciana** Lx. Fl. Dak. Gr., p. 142, pl. xxxviii, f. 1, 1892.
Dakota group: Kansas.
- Cratægus Marcouiana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 36, pl. xiv, f. 2; pl. xv, f. 1, 2, 1888.
Unknown: "Fossil Point, P. Y. Sheet."
- Cratægus Marcouiana subintegrifolia** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 36, pl. xiv, f. 2, 1888.
Unknown: "Fossil Point, P. Y. Sheet."
- Cratægus myricoides** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 56, 1888.
Denver group: Golden, Colorado.
- Cratægus tenuinervis** Lx. Fl. Dak. Gr., p. 142, pl. liv, f. 5-7, 1892.
Dakota group: Kansas.
- CREDNERIA** Zenker. Beiträge z. Naturgeschichte der Urwelt, p. 15, 1833.
- ? **Credneria daturæfolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 97, pls. xlii, f. 4; xliii, xlv, 1887.
Fort Union group: Seven-Mile Creek, Montana.
- Credneria Leconteana** Lx. = *Protophyllum Leconteanum*.
- Credneria ? microphylla** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876].
Dakota group: Kansas.
- CTENIS**, Lindley and Hutton. Foss. Fl. Great Britain, vol. ii, p. 63, 1834.
- Ctenis imbricata** Font. Potomac Fl., p. 177, pl. cxxxviii, f. 10-12, 1889.
Potomac formation: Fredericksburg, Virginia.
- CTENOPHYLLUM** Schimper. Pal. Vég., vol. ii, p. 143, 1870.
- Ctenophyllum latifolium** Font. Potomac Fl., p. 175, pl. lxviii, f. 2, 3, 1889.
Potomac formation: Fredericksburg, Virginia.
- CTENOPTERIS** Brongniart, in litt. Saporta. Plantes Jurassiques, vol. i, p. 351, 1873.
- Ctenopteris angustifolia** Font. Potomac Fl., p. 159, pl. lxv, f. 2; lxvii, f. 4, 1889.
Potomac formation: Near Potomac Run, Virginia.
- Ctenopteris insignis** Font. Potomac Fl., p. 156, pl. lxi, f. 4, 5; lxii, f. 1; lxiii, f. 1, 2, 1889.
Potomac formation: Fredericksburg, and near Potomac Run, Virginia.
- Ctenopteris integrifolia** Font. Potomac Fl., p. 158, pl. lxii, f. 2; lxv, f. 3, 1889.
Potomac formation: Near Potomac Run, and Fredericksburg, Virginia.

- Ctenopteris longifolia** Font. Potomac Fl., p. 159, pl. lxvii, f. 5, 1889.
Potomac formation: Fredericksburg, Virginia.
- Ctenopteris minor** Font. Potomac Fl., p. 157, pl. lxvii, f. 3, 1889.
Potomac formation: Fredericksburg, Virginia.
- Ctenopteris virginicensis** Font. Potomac Fl., p. 157, pl. lxii, f. 4; lxv, f. 1; lxvi, f. 4, 1889.
Potomac formation: Fredericksburg, Virginia.
- CUNNINGHAMITES** Presl. In Sternb., Vers., vol. ii, p. 203, 1833.
- Cunninghamites elegans** (Corda) Endl. Synop. Conif., p. 305, 1847;
Newby., Fl. Amboy Clays, p. 48, pl. v, f. 1-7, 1895 [1896].
Amboy clay: Keyport, New Jersey.
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- Cunninghamites squamosus** Heer. Kreide Fl. v. Quedlinburg, p. 9,
pl. i, f. 5-7, 1872; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 129,
pl. xi, f. 3, 1897.
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- CUPRESSINOXYLON** Göppert. Monogr. d. foss. Conif., p. 196,
1850.
- Cupressinoxylon arkansanum** Kn. Ann. Rept. Geol. Surv. of Ark.
for 1889, vol. ii, p. 253, pl. ix, f. 1, 2, 1889.
Tertiary [Orange Sand]: Near Wittsburg, Cross County, Arkansas.
- Cupressinoxylon Calli** Kn. Ann. Rept. Geol. Surv. of Ark. for 1889,
vol. ii, p. 254, pl. ix, f. 3-7, 1889.
Tertiary: 5½ miles northwest of Gainesville, Green County,
Arkansas.
- Cupressinoxylon? Bibbinsi** Kn. Science, new ser., vol. iii, no. 68,
p. 584, f. (in text) 1-4, 1896.
Upper Potomac formation: Cape Sable, Maryland.
- Cupressinoxylon columbianum** Kn. Bull. U. S. Geol. Surv., no. 56,
p. 49, pl. iv, f. 5; pl. v, f. 3, 4; pl. vi, f. 1-5; pl. vii, f. 1, 1888.
Potomac formation: Dutch Gap Canal, James River, Virginia.
- Cupressinoxylon dubium** Cramer. In Heer's, Fl. Foss. Arct., vol. i, p.
173, pl. xxxiv, f. 3; xxxviii, f. 1-6, 1868.
——: Banks Land.
- Cupressinoxylon elongatum** Kn. Proc. U. S. Nat. Mus., vol. xi, p.
7, pl. iii, f. 1-4, 1888.
Fort Union group: Near Glendive, Montana.
- Cupressinoxylon eutreton** Felix. Zeitschr. d. Deutschen geol. Gesell.
Jahr. 1896, p. 255, 1896.
Eocene: Yanceys, Yellowstone National Park.
- Cupressinoxylon Glasgowi** Kn. Proc. U. S. Nat. Mus., vol. xi, p.
6, pl. ii, f. 1-5, 1888.
Cretaceous?: Emmet County, Iowa.
- Cupressinoxylon McGeei** Kn. Bull. U. S. Geol. Surv., no. 56, p. 46,
pl. ii, f. 5; pl. iii, f. 1-5, 1888.
Potomac formation: Washington, District of Columbia.

Cupressinoxylon polyommatum Cramer. In Heer's Fl. Foss. Arct., vol. i, p. 172, pl. xxxiv, f. 2a, b; xxxv, f. 2, 3; xxxvii, 1868.

——: Banks Land.

Cupressinoxylon pulchellum Kn. Bull. U. S. Geol. Surv., no. 56, p. 45, pl. ii, f. 1-4, 1889.

Potomac formation: Spring Hill, Appomattox River, Virginia.

Cupressinoxylon pulchrum Cramer. In Heer's Fl. Foss. Arct., vol. i, p. 171, pl. xxxiv, f. 1; xxxvi, f. 6-8, 1868.

——: Banks Land.

Cupressinoxylon taxodioides Conwentz. Schriften d. Naturf. Gesell. Danzig, vol. iv, p. 124, 1878; Neues Jahrb. f. 1878, p. 812, pl. xiii, xiv, 1878.

Tertiary: Calistoga, California.

Cupressinoxylon Wardi Kn. Bull. U. S. Geol. Surv., no. 56, p. 48, pl. iv, f. 1-4; pl. v, f. 1, 2, 1888.

Potomac formation: Near Montello, District of Columbia; Neabsco Creek, Virginia.

Cupressinoxylon sp., Kn. In Turner, Bull. Geol. Soc. Am., vol. ii, p. 394, 1891.

Knoxville beds: Eagle Point, California.

Cupressoxylo sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 67, 1873.

Lower Cretaceous: British Columbia.

Cupressoxylo sp. (a), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 3, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressoxylo sp. (b), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressoxylo sp. (c), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 4, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressoxylo sp. (d), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressoxylo sp. (e), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 5, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressoxylo sp. (f), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Cupressites Cookii Newby. Later Extinct Floras, p. 9, 1868; Fl. Amboy Clays, p. 61, 1895 [1896]. Nomen nudum.

Amboy clay: New Jersey.

Cupressus thyoides L. = *Chamaecyparis thyoides*.

CYATHEITES Göppert. Syst. Fil. Foss., p. 319, 1836.

Cyatheetes? nebraskana (Heer) n. comb.

Pecopteris nebraskana Heer. Saporta, Fl. Foss. d. Sézanne, p. 332, f. (in text) 8, 1868; Lx., Cret. Fl., p. 46, pl. xxx, f. 12b, 1874.

Dakota group: Kansas.

CYCADEOIDEA Buckland. Proc. Geol. Soc. London, vol. i, p. 80, 1827.

Cycadeoidea Bibbinsi Ward. Proc. Biol. Soc. Wash., vol. xi, p. 15, 1897.

Potomac formation: Maryland.

Cycadeoidea dacotensis (McBride) Ward. Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

Bennettites dacotensis McBride. Am. Geol., vol. xii, p. 249, pl. xi, f. 1, 2, 1893; Bull. Lab. Nat. Hist. State Univ. of Iowa, vol. ii, p. 391, pl. xii, f. 1, 2, 1893.

Lower Cretaceous: Minnekahta Station, South Dakota.

Cycadeoidea Fontaineana Ward. Proc. Biol. Soc. Wash., vol. xi, p. 13, 1897.

Potomac formation: Maryland.

Cycadeoidea Goucheriana Ward. Proc. Biol. Soc. Wash., vol. xi, p. 14, 1897.

Potomac formation: Maryland.

Cycadeoidea Jenneyana Ward. Proc. Biol. Soc. Wash., vol. ix, p. 87, 1894.

Lower Cretaceous: Near Rapid City, South Dakota.

Cycadeoidea marylandica (Font.) Cap. and Solms. Mem. Real. Accad. Sci. Ist. Bologna, ser. v, tom. ii, p. 179, 180, 186, 1892; Ward, Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

Cycas sp., Tyson. First Rept. State Agric. Chem. Md., p. 42, 1860.

Bennettites sp., Car. Trans. Linn. Soc. Lond., vol. xxvi, p. 708, 1870.

Cycadeoidea sp., Font. Am. Journ. Sci., vol. xvii, p. 157, 1879.

Tysonia marylandica Font. Potomac Fl., p. 193, pl. clxxiv-clxxx, 1889.

Potomac formation: Maryland.

Cycadeoidea McGeeana Ward. Proc. Biol. Soc. Wash., vol. xi, p. 12, 1897.

Potomac formation: Maryland.

Cycadeoidea mirabilis (Lx.) Ward. Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

Zamiostrobus? mirabilis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, 2d ser., no. 5, p. 383, 1875 [1876]; Tert. Fl. p. 70, pl. xliii, f. 1, 1878.

Nelumbium James. Science, vol. iii, p. 434, 1884.

Clathropodium mirabile (Lx.) Ward. Science, vol. iii, p. 532, 1884.

Cycadeoidea Zamostrobus Solms. Mem. Real. Accad. Sci. Ist. Bologna, ser. v, tom. ii, p. 210, 1892.

Unknown: Golden, Colorado.

Cycadeoidea munita Cragin. Bull. Washburn College Lab. Nat. Hist., Topeka, Kans., vol. ii, p. 65, 1889.

Lower Cretaceous: Belvidere, Kansas.

Cycadeoidea Tysoniana Ward. Proc. Biol. Soc. Wash., vol. xi, p. 11, 1897.

Potomac formation: Maryland.

Cycadeoidea Uhleri Ward. Proc. Biol. Soc. Wash., vol. xi, p. 14, 1897.

Potomac formation: Maryland.

Cycadeoidea Zamiestrobis Solms=*Cycadeoidea mirabilis*.

Cycadeoidea sp., Font.=*Cycadeoidea marylandica*.

CYCADEOSPERMUM Saporta. Pl. Jurass., vol. ii, p. 235, 1875.

Cycadeospermum acutum Font. Potomac Fl., p. 270, pl. cxxxv, f. 12, 1889.

Potomac formation: Potomac Run, Virginia.

Cycadespermum angustum Font. Potomac Fl., p. 271, pl. cxxxv, f. 20, 1889.

Potomac formation: Near Potomac Run, Virginia.

Cycadeospermum (*Dioonites*) *columbianus* Dn.=*Dioonites columbianus*.

Cycadeospermum columnare Lx. Fl. Dak. Gr., p. 31, pl. xliv, f. 7, 8, 1891.

Dakota group: Kansas.

Cycadeospermum ellipticum Font. Potomac Fl., p. 271, pl. cxxxv, f. 19, 1889.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

Cycadeospermum lineatum Lx. Fl. Dak. Gr., p. 30, pl. i, f. 14, 1891.

Dakota group: Kansas.

Cycadeospermum obovatum Font. Potomac Fl., p. 270, pl. cxxxv, f. 13, 1889.

Potomac formation: Near Potomac Run, Virginia.

Cycadeospermum rotundatum Font. Potomac Fl., p. 271, pl. cxxxvi, f. 12, 1889.

Potomac formation: Kankeys, Virginia.

Trinity division, Glenrose, Texas.

Cycadeospermum spatulatum Font. Potomac Fl., p. 271, pl. cxxxv, f. 11, 21, 1889.

Potomac formation: Near Potomac Run, Virginia.

CYCADINOCARPUS Schimper. Pal. Vég., vol. ii, p. 208, 1870.

Cycadinocarpus circularis Newby. Fl. Amboy Clays, p. 46, pl. xlvi, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

CYCADITES Buckland. Geol. and Mineral., vol. i, p. 496, 1836.

Cycadites pungens Lx. Fl. Dak. Gr., p. 30, pl. ii, f. 6, 1892.

Dakota Group: Kansas.

Cycadites unjiga Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 20, pl. i, f. 2, 2a, 1882 [1883].

——: Pine River Forks, Table Mountain, and Peace River, Northwest Territory.

Cycas sp., Tyson = *Cycadeoidea marylandica*.

CYPERACITES Schimper. Pal. Vég., vol. ii, p. 412, 1870.

[*Cyperites* Lindl. and Hutt. Foss. Fl. Gr. Brit., vol. i, p. 124, 1831-1833 = *Lepidodendron*. *Cyperites* Heer. Fl. Tert. Helv., vol. i, p. 75, 1855 = *Cyperacites*.]

Cyperacites angustior (Al. Br.) Schimp. Pal. Vég., vol. ii, p. 414, 1870.

Cyperites angustior Al. Br. In Stizenberger, Versteinung, p. 75, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——?: Elk Creek, Yellowstone National Park.

? **Cyperacites borealis** (Heer) n. comb.

Cyperites borealis? Heer. Fl. Foss. Arct., vol. i, p. 96, pl. xlv, f. 3, 1868; Lx., Proc. U. S. Nat. Mus., vol. x, p. 36, 1887.

Pliocene?: Applegarth Canyon.

Cyperacites canaliculatus (Heer) Schimp. Pal. Vég., vol. ii, p. 415, 1870.

Cyperites canaliculatus Heer. Fl. Tert. Helv., vol. i, p. 77, pl. xxviii, f. 5, 1855; Lx., Proc. U. S. Nat. Mus., vol. x, p. 36, 1887.

——?: Near Strahlenberg, Utah.

Cyperacites paucinervis (Heer) Schimp. Pal. Vég., vol. ii, p. 414, 1870.

Cyperites paucinervis Heer. Fl. Tert. Helv., vol. i, p. 79, pl. xxix, f. 4, 1855; Dn., Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 144, 1895 [1896].

Eocene: Stanley Park, British Columbia.

Cyperacites Haydenii (Lx.) n. comb.

Cyperites Haydenii Lx. Cret. and Tert. Fl., p. 140, pl. xxiii, f. 1-3a, 1883.

Green River Group: Uinta County, formerly but erroneously called Randolph County, Wyoming.

Cyperacites? sp. (Dn.) n. comb.

Cyperites? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 90, f. (in text) 31, 1890.

Eocene?: Similkameen Valley, British Columbia.

Cyperacites sp. (Dn.) n. comb.

Cyperites sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, f. (in text) 16, 1892.

Kootanie: Anthracite? British Columbia.

Cyperacites sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

Cyperites borealis Heer = *Cyperacites borealis*.

Cyperites canaliculatus Heer = *Cyperacites canaliculatus*.

Cyperites angustior Al. Br. = *Cyperacites angustior*.

Cyperites Deucalionis Heer. Fl. Tert. Helv., vol. i, p. 78, pl. xxix, f. 1; pl. xxvi, f. 13*b*; xxx, f. 3*h*, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Eocene?: Barrell Springs, Wyoming.

Cyperites Haydenii Lx. = *Cyperacites Haydenii*.

Cyperites paucinervis Heer = *Cyperacites paucinervis*.

Cyperites sp., Dn. = *Cyperacites* sp.

CYPERUS (Micheli) Linnæus. Syst., ed. i, 1735.

Cyperus ! Braunianus ? Heer. Fl. Tert. Helv., vol. i, p. 72, pl. xxii, f. 6; pl. xxvii, f. 4-7, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Eocene?: Barrell Springs, Wyoming?

Cyperus Chavanensis "Heer" = *Cyperus Chavannesi*.

Cyperus Chavannesi Heer. Fl. Tert. Helv., vol. i, p. 72, pl. xxii, f. 7; xxviii, f. 1, 1855.

Cyperus Chavanensis Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 291, 1871 [1872]; Tert. Fl., p. 92, pl. ix, f. 1, 2, 1878.

Green River group: Green River Station, Wyoming.

Laramie group?: Evanston, Wyoming.

Cyperus sp., Kn. Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

Cyperus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

CYTISUS Linnæus. Syst., ed. i, 1735.

Cytisus florissantianus Lx. Cret. and Tert. Fl., p. 200, pl. xxxix, f. 14, 1883.

Green River group: Florissant, Colorado.

Cytisus modestus Lx. Cret. and Tert. Fl., p. 200, pl. xxxix, f. 9-11, 1883.

Green River group: Florissant, Colorado.

CZEKANOWSKIA Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 70, 1876.

Czekanowskia capillaris Newby. Fl. Amboy Clays, p. 61, pl. ix, f. 14-16, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

DALBERGIA Linnæus, f. Suppl., p. 52, 1781.

Dalbergia apiculata Newby. Fl. Amboy Clays, p. 90, pl. xlii, f. 17-19, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

Dalbergia cuneifolia Heer. Fl. Tert. Helv., vol. iii, p. 104, pl. cxxxiii, f. 20, 1859; Cret. and Tert. Fl., p. 200, pl. xxxiv, f. 6, 7, 1883.

Green River group: Florissant, Colorado.

Dalbergia hyperborea Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 102, pl. xxvi, f. 4a, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xi, p. 7, pl. iv, f. 7, 1892.

Cretaceous: Tottenville, Staten Island.

Dalbergia Rinkiana Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 102, pl. xxvi, f. 1-3, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 236, pl. vi, f. 4, 5, 1893.

Cretaceous: Brooklyn, New York; Lloyds Neck, Long Island.

DAMMARA Gartner. Fruct., vol. ii, p. 100, 1791.

Dammara borealis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 54, pl. xxxvii, f. 5, 1882; Newby., Fl. Amboy Clays, p. 46, pl. x, f. 8, 1895 [1896]; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. i, f. 17, 1892.

Amboy clay: No location.

Cretaceous: Tottenville, Staten Island.

Dammara microlepis Heer, Newby. = *Juniperus macilentia*.

Dammara (?) cliffwoodensis Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 128, pl. xi, f. 5-8, 1897.

Clay marl (Upper cretaceous): Cliffwood, New Jersey.

DAMMARITES Presl. In Sternberg, Vers., vol. ii, p. 203, 1833.

Dammarites caudatus Lx. Fl. Dak. Gr., p. 32, pl. i, f. 9, 10, 1892.

Podozamites caudatus Lx. Cret. and Tert. Fl., p. 29, 1883.

Podozamites praelongus Lx. Cret. and Tert. Fl., p. 29, 1883.

Dakota group: Kansas.

Dammarites dubius Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 8, 1893 [1894].

Upper Cretaceous: Nanaimo.

Dammarites emarginatus Lx. Fl. Dak. Gr., p. 33, pl. i, f. 11, 1892.

Podozamites emarginatus Lx. Cret. and Tert. Fl., p. 29, 1883.

Dakota group: Kansas.

DAPHNOGENE Unger. Synop. Pl. Foss., p. 227, 1845.

Daphnogene anglica ? Heer. Fl. Tert. Helv., vol. iii, p. 315, 1859; Lx., Ann. Rept., op. cit., p. 401, 1873 [1874]; Tert. Fl., p. 222, pl. xxxvii, f. 9, 1878.

Denver group: Golden, Colorado.

Daphnogene cretacea Lx. = *Cinnamomum Scheuchzeri*.

Daphnogene elegans Wat.-Ward = *Diospyros ficoidea*.

Daphnogene Heerii Lx. = *Cinnamomum Heerii*.

Daphnogene lanceolata Ung. = *Cinnamomum lanceolatum*.

DAPHNOPHYLLUM Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 17, 1869.

Daphnophyllum angustifolium Lx. Fl. Dak. Gr., p. 98, pl. xxxvi, f. 8, 1892.

Dakota group: Kansas.

Daphnophyllum dakotense Lx. Fl. Dak. Gr., p. 99, pl. li. f. 1-4; pl. lii, f. 1, 1892.

Dakota group: Kansas.

Daphnophyllum sp., Lx. Rept. on Clay in N. J., p. 29, 1878=?

Amboy clay: Sayreville, New Jersey.

DAVALLIA Smith. Mem. Act. Turin, vol. v, p. 414, 1791.

Davallia (Stenoloma) tenuifolia Sw. Dawson, Rept on Geol. and Res. in Vic. 49th Parallel, Appen. A, p. 329, 1875.

Canadian Upper Laramie: Porcupine Creek.

DAVALLITES Dawson. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

Davallites Richardsoni Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 18-18b, 1882 [1883].

Upper Cretaceous: Protection Island.

DELESSERIA Lam. Ann. Mus., vol. xx, p. 122, 1813.

Delesseria fulva Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873]; Tert. Fl., p. 39, pl. i, f. 10, 1878.

Laramie group: Golden, Colorado.

Delesseria incrassata Lx. = *Caulerpites incrassatus*.

Delesseria ligulata Lx. = *Caulerpites ligulatus*.

DEWALQUEA Saporta and Marion. Mém. cour. et des Sav. étrangers de l'Académie, vol. xxxvii, p. 55, 1874.

Dewalquea dakotensis Lx. Fl. Dak. Gr., p. 211, pl. lix, f. 5, 6, 1892.

Dakota group: Kansas.

Dewalquea grönlandica Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 87, pl. xxix, f. 18, 19; xlii, f. 11, 1882; Newby, Fl. Amboy Clays, p. 129, pl. xli, f. 2, 3, 12, 1895 [1896].

Amboy clay: New Jersey.

Dewalquea Haldemiana (Deb.) Sap. and Mar. Essai, p. 60, pl. 7, f. 1, 2, 1874; Lx., Proc. U. S. Nat. Mus., vol. x, p. 46, 1887; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. ii, f. 10, 2a, 1892.

Cretaceous: Upper Kanab Valley, Utah; Staten Island.

Dewalquea insignis Hos. and v. d. Marck. Palæontogr., vol. xxvi, p. 172 [48 of reprint], pl. 32, 33, 34, 1880; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. i, f. 9, 1892.

Cretaceous: Staten Island.

Dewalquea primordialis Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 18, pl. A, f. 10, 1893.

Dakota group: New Ulm, Minnesota.

Dewalquea trifoliata Newby. Fl. Amboy Clays, p. 129, pl. xxii, f. 4-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

DICKSONIA Presl. Pterid., p. 135, 1836.

Dicksonia munda Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 5, 5a, 1885 [1886].

Mill Creek series: Mill Creek.

Dicksonia sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

DIOÖNITES. Miquel. Tijdschr. v. Wis- en Nat.-Wetens., vol. iv, p. 211 (7 of reprint), 1851.

Dioönites borealis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iii, f. 37, 1882 [1883].

Lower Cretaceous?: Willow Creek, Northwest Territory.

Kootanie: Martin Creek and Canmore, British Columbia.

Dioönites Buchianus (Ett.) Born. Org. Reste d. Lettenkohlengr. Thüringens, p. 57, 1856; Font., Potomac Fl., p. 182, pl. lxxviii, f. 1; lxxix, f. 1, 3; lxx, f. 2, 3; lxxi, f. 1; lxxii, f. 1, 2; lxxiii, f. 1-3; lxxiv, f. 1-3, 1889.

Pterophyllum Buchianum Ett. Fl. d. Wealdenb., p. 21, 1852.

Potomac formation: James River, Trents Reach, Dutch Gap Canal, Kankeys, and near Telegraph Station, Virginia.

Trinity division: Glenrose, Texas.

Dioönites Buchianus angustifolius Font. Potomac Fl., p. 185, pl. lxxvii, f. 6; lxxviii, f. 4; lxxi, f. 2, 1889.

Potomac formation: Dutch Gap, Kankeys, and Occoquan, Virginia.

Trinity division: Glenrose, Texas.

Horsetown beds: Shasta County, California.

Dioönites Buchianus obtusifolius Font. Potomac Fl., p. 184, pl. clxxviii, f. 3, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Dioönites Buchianus rarineris Font. Proc. U. S. Nat. Mus., vol. xvi, p. 264, pl. xxxvi, f. 3, 4, 1893.

Trinity division: Glenrose, Texas.

Knoxville beds: Tehama County, California.

Dioönites columbianus Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, 1892 [1893].

Cycadeospermum (Dioönites) columbianus Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 69, pl. i, f. 1-12, 1873.

Lower Cretaceous: Skidegate Channel, Queen Charlotte Island.

Dioönites Dunkerianus (Göpp.) Miq. Tijdschr. v. Wis- en Nat.-Watens., vol. iv, p. 212, 1851; Font. Proc. U. S. Nat. Mus., vol. xvi, p. 265, pl. xxxvi, f. 12; xxxvii, f. 1, 1893.

Trinity division: Glenrose, Texas.

Horsetown beds: Shasta County, California.

DIOSCOREA Plumier ex Linnaeus. Gen., ed. i, p. 306, 1737.

Dioscorea? cretacea Lx. Cret. Fl., p. 56, pl. xxviii, f. 10, 1874.

Dakota group: Western Kansas.

DIOSPYROS Linnæus. Gen., ed. i, p. 143, 1737.

Diospyros alaskana Schimp. Pal. Vég., vol. ii, p. 949, 1872.

*Diospyros lancifolia** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Heer, Neue Denkschr., vol. xxi, p. 8, pl. i, f. 10-12; pl. ii, f. 1-3, 1865.

[* Preoccupied.]

Eocene?: Alaska; Cherry Creek, Oregon; Bellingham Bay.

Laramie group?: Evanston, Wyoming.

Diospyros ambigua Lx. Cret. and Tert. Fl., p. 60; Fl. Dak. Gr., p. 110, 1892.

Diospyros anceps Lx. Cret. Fl., p. 89, pl. vi, f. 6, 1874.

Quercus anceps Lx. Am. Journ. Sci., vol. xlv, p. 96, 1868. [*D. anceps* preoccupied by sp. of Heer.]

Dakota group: Nebraska.

Diospyros anceps Heer. Fl. Tert. Helv., vol. iii, p. 12, pl. cii, f. 15-18, 1859; Lx., Proc., U. S. Nat. Mus., vol. v, p. 448, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Diospyros anceps Lx. = *Diospyros ambigua*.

Diospyros apiculata Lx. Fl. Dak. Gr., p. 110, pl. xiv, f. 3, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

Diospyros brachysepala Al. Br. Neues Jahrb. f. Min. 1845, p. 170, 1845; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1872 [1873]; Tert. Fl., p. 232, pl. xl, f. 7-10; pl. xliii, f. 6, 1878.

Rhamnus inæqualis Lx. Ann. Rept., op. cit., p. 405, 1873 [1874]; Tert. Fl., p. 279, pl. lii, f. 16, 1878.

Laramie group: Golden, Sand Creek, Sedalia, Colorado; Black Buttes and Hodges Pass, Wyoming.

Fort Union group: Yellowstone River, Montana.

Green River group: Florissant, Colorado.

Montana formation?: Point of Rocks, Wyoming.

Diospyros? celastroides Lx. Fl. Dak. Gr., p. 113, pl. xx, f. 7, 1892.

Dakota group: Kansas.

Diospyros Copeana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 414, 1873 [1874]; Tert. Fl., p. 232, pl. xl, f. 11, 1878.

Green River group: Elko Station, Nevada.

Diospyros eminens Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. x, f. 40, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Diospyros? ficoidea Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept., op. cit., p. 314, 1874 [1876]; Tert. Fl., p. 231, pl. xl, f. 5, 6, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 105, pl. xlix, f. 3, 4, 1887.

Daphnogene elegans Wat. Ward, Bull. U. S. Geol. Surv., no. 37, p. 51, pl. xxv, f. 1, 1887.

Fort Union group: Clear Creek and Burns Ranch, Montana.

Laramie group: Black Buttes and Hodges Pass, Wyoming.

Diospyros laucifolia Lx. = *Diospyros alaskana*.

Diospyros nitida Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. iii, f. 10, 1882 [1883].

——: Peace River, Northwest Territory.

?***Diospyros obtusata*** Ward. Bull. U. S. Geol. Surv., no. 37, p. 105, pl. xlix, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Diospyros primæva Heer. Phyll. Crét. d. Nebr., p. 19, pl. i, f. 6, 7, 1866; Lx., Fl. Dak. Gr., p. 109, pl. xx, f. 1-3, 1892; Newby., Fl. Amboy Clays, p. 124, pl. xxx, f. 1-5, 1895 [1896].

Dakota group: Nebraska and Kansas.

Cretaceous: Glen Cove, Long Island.

Amboy clay: South Amboy, New Jersey.

Diospyros pseudoanceps Lx. Fl. Dak. Gr., p. 111, pl. xxii, f. 1, 1892; Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 17, pl. B, f. 6, 1893.

Dakota group: Kansas; New Ulm, Minnesota.

Diospyros rotundifolia Lx. Cret. Fl., p. 89, pl. xxx, f. 1, 1874; Fl. Dak. Gr., p. 112, pl. xvii f. 8-11, 1892; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 53, pl. 179, f. 2, 1894.

Dakota group: Western Kansas.

Cretaceous: Glen Cove, Long Island.

Diospyros Steenstrupi? Heer. Fl. Foss. Arct., vol. vii, p. 32, pl. lxiv, f. 1, 1883; Lx., Fl. Dak. Gr., p. 111, pl. xvi, f. 9, 1892.

Dakota group: Kansas; Staten Island?

Diospyros stenosepala Heer. Fl. Foss. Alask., p. 35, pl. viii, f. 7, 8, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872].

Eocene?: Alaska; Snake River, Yellowstone National Park.

Diospyros vancouverensis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 32, 1882 [1883].

Upper Cretaceous: Nanaimo; Port McNeill, Vancouver Island.

Diospyros virginiana Turneri Lx. Proc. U. S. Nat. Mus., vol. xi, p. 35, 1888.

Miocene: Contra Costa, California.

Diospyros Wodani Ung. Gen. et Sp. Pl. Foss., p. 435, 1850; Syll. Pl. Foss., pt. iii, p. 27, pl. ix, f. 10-12, 1859; Lx., Tert. Fl., p. 233, pl. lix, f. 13, 1878.

Calycites hexaphylla Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1872 [1873].

Laramie group?: Evanston, Wyoming.

***Diospyros* (calyx)** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. x, f. 41, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

***Diospyros* sp.**, Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignitic Tertiary: Porcupine Creek.

Diplazium Muelleri? Heer, Lx. = *Asplenium Crossii*.

DISTICHIMUM Bruchman Schimper and Gumbel. Bryol. Europ. Foss., p. 18-20, 1846.

Distichium capillaceum Bruch. and Schimp. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 1896.

Pleistocene: Long Portage, Missinaibi River.

DOMBEYOPSIS Unger. Steiermärkische Zeitschr. Gratz, vol. ix, 1 heft, p. 47 (?) [24 of reprint], 1848; Gen. et Sp. Pl. Foss., p. 447, 1850. *Dombeyopsis æquifolia* Göpp. Lx. = *Ficus tiliæfolia*.

Dombeyopsis grandifolia? Ung. Gen. et Sp. Pl. Foss., p. 447, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1873 [1874]; Tert. Fl., p. 255, pl. xlvii, f. 6, 1878.

Denver group: Golden, Colorado.

Dombeyopsis obtusa Lx. Ann. Rep. U. S. Geol. and Geogr. Surv. Terr., p. 375, 1872 [1873]; Tert. Fl., p. 255, pl. xlvii, f. 4, 5, 1878.

Denver group: Golden, Colorado.

Laramie group: Golden, Coal Creek, Colorado.

Dombeyopsis obtusiloba Lx. var. ? = *Menispermities obtusiloba*.

Dombeyopsis occidentalis Lx. = *Ficus occidentalis*.

Dombeyopsis platanoides Lx. Tert., Fl. p. 254, pl. xlvii, f. 1, 2, 1878.

Quercus platania var., *rotundifolia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1872 [1873].

Laramie group: Bozeman Coal Field, Montana.

Dombeyopsis tiliæfolia (Al. Br.) Ung. = *Ficus tiliæfolia*.

Dombeyopsis trivialis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 255, pl. xlvii, f. 3, 1878.

Laramie group: Golden, Colorado.

DROSERA Linnaeus. Syst., ed. i, 1735.

Drosera rotundifolia L. Dn. Can. Nat., vol. iii, new ser., p. 70, 1868; Geol. Hist. Pl., p. 228, 1888.

Pleistocene: Greens Creek on Ottawa River, Canada.

DRUPA Lesquereux. Am. Journ. Sci., vol. xxxii, 2d ser., p. 360, 1861.

Drupa rhabdosperma Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 150, 1861.

———: Brandon, Vermont.

Dryandroides lignitum (Ung.) Ett. Lx. = *Myrica lignitum*.

DRYOPHYLLUM Debey. Sur l. feuilles Querciformes d'Aix-la-Chapelle, p. 7, 1881.

Dryophyllum aquamarum Ward. Bull. U. S. Geol. Surv., no. 37, p. 26, pl. x, f. 2-4, 1887.

Laramie group: Black Buttes, Wyoming.

Dryophyllum basidentatum Ward = *Quercus carbonensis*.

Dryophyllum Bruneri Ward = *Dryophyllum subfalcatum*.

Dryophyllum (Quercus) crenatum Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 371, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 301, 1874 [1876]; Tert. Fl., p. 162, pl. lxii, f. 10, 11, 1878.

Montana formation: Point of Rocks, Wyoming.

Dryophyllum elongatum Dn. = *Quercus occidentalis*.

Dryophyllum falcatum Ward. Bull. U. S. Geol. Surv., no. 37, p. 27, pl. xi, f. 1, 1887.

Laramie group: Hodges Pass, Wyoming.

Dryophyllum (*Quercus*) *Holmesii* Lx. = *Quercus Holmesii*.

Dryophyllum latifolium Lx. = *Quercus latifolia*.

Dryophyllum neillianum Dn. = *Quercus occidentalis*.

Dryophyllum occidentale Dn. = *Quercus occidentalis*.

Dryophyllum primordiale Lx. = *Quercus primordialis*.

Dryophyllum (*Quercus*) *salicifolium* Lx. = *Quercus Holmesii*.

Dryophyllum stanleyanum Dn. Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 147, pl. vii, f. 13, 1895-96.

Eocene: Stanley Park, Vancouver, British Columbia.

Dryophyllum subfalcatum Lx. Bull. U. S. Geol. and Geogr. Serv. Terr., vol. i, p. 379, 1875; Ann. Rept., p. 301, 1874 [1876]; Tert. Fl., p. 163, pl. lxiii, f. 10, 1878.

Quercus gracilis Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883]; Plates, pl. lxvii, f. 4 [ined].

Dryophyllum Bruneri Ward. Bull. U. S. Geol. Surv., no. 37, p. 27, pl. x., f. 5-8, 1887.

Montana formation: Point of Rocks, Wyoming.

Laramie group: Hodges Pass, Wyoming.

Dryophyllum sp., Dn. = *Quercus occidentalis*.

DRYOPTERIS Adanson. Fam. Pl., vol. ii, p. 20, 1763.

Dryopteris angustipinnata (Font.) n. comb.

Aspidium angustipinnatum Font. Potomac Fl., p. 98, pl. xvi, f. 1, 3, 8; xvii, f. 1; xix, f. 10, 1889.

Potomac formation: Trents Reach, Dutch Gap Canal, Fredericksburg, and near Potomac Run, Virginia.

Dryopteris angustipinnata montanense (Font.) n. comb.

Aspidium angustipinnatum montanense Font. Proc. U. S. Nat. Mus., vol. xv, p. 491, pl. lxxxiv, f. 1, 1a, 1892.

Kootanie: Great Falls, Montana.

Dryopteris arguta (Lx.) n. comb.

Lathraea arguta Lx. Am. Journ. Sci., vol. lxxv, p. 207, 1868.

Aspidium Lakesii (Lx.) Kn. Proc. Biol. Soc. Wash., vol. vii, p. 154, 1892; Bull. U. S. Geol. Surv., no. 105, p. 45, pl. vi, f. 1-4, 1893.

Sphenopteris Lakesii Lx. Tert. Fl., p. 49, pl. ii, f. 1, 1a, 1878.

Sphenopteris eocenica Ett. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873].

Sphenopteris membranacea Lx. Ann. Rept., op. cit., p. 394, 1873 [1874]; Tert. Fl., p. 50, pl. ii, f. 2-3a, 1878.

Denver group: Golden, Colorado.

Dryopteris cystopteroides (Font.) n. comb.

Aspidium cystopteroides Font. Potomac Fl., p. 99, pl. xvi, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Dryopteris dentata (Font.) n. comb.

Aspidium dentatum Font. Potomac Fl., p. 102, pl. xxv, f. 6, 7, 14, 15, 1889.

Potomac formation: Dutch Gap Canal, near Potomac Run, near telegraph station, Virginia.

Dryopteris elliptica (Font.) n. comb.

Aspidium ellipticum Font. Potomac Fl., p. 95, pl. xiii, f. 9, 10, 1889.

Potomac formation: Near Potomac Run, near Brooke, Virginia.

Dryopteris fredericksburgense (Font.) n. comb.

Aspidium fredericksburgense Font. Potomac Fl., p. 94, pl. xi, f. 1-6; xii, f. 1-6; xvi, f. 9; xix, f. 6, 7, 1889.

Potomac formation: Fredericksburg and near Telegraph Station, Virginia.

Kootanie: Anthracite, British Columbia; Great Falls, Montana.

Dryopteris heterophylla (Font.) n. comb.

Aspidium heterophylla Font. Potomac Fl., p. 96, pl. xiv, f. 1-5; xv, f. 1-5, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

Dryopteris idahoensis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 721, pl. xcix, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

Dryopteris Kennerleyi (Newby.) n. comb.

Aspidium Kennerleyi Newby. Bost. Journ. Nat. Hist., vol. vii, p. 513, 1863.

Upper Cretaceous: Vancouver Island (Dn.).

Upper Cretaceous?: Newcastle coal, Vancouver Island.

Dryopteris macrocarpa (Font.) n. comb.

Aspidium macrocarpum Font. Potomac Fl., p. 103, pl. xvii, f. 2, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Dryopteris microcarpa (Font.) n. comb.

Aspidium microcarpum Font. Potomac Fl., p. 103, pl. lix, f. 2, 12; lx, f. 6, 7, 1889.

Potomac formation: Near Potomac Run, Virginia.

Dryopteris monocarpa (Font.) n. comb.

Aspidium monocarpum Font. Proc. U. S. Nat. Mus., vol. xv, p. 490, pl. lxxxiii, f. 4-6a; pl. lxxxiv, f. 3, 3a, 1892.

Kootanie: Great Falls, Montana.

Dryopteris montanense (Font.) n. comb.

Aspidium montanense Font. Proc. U. S. Nat. Mus., vol. xv, p. 490, pl. lxxxii; f. 1-3; pl. lxxxiii, f. 2-3a, 1892.

Kootanie: Great Falls, Montana.

Dryopteris oblongifolia (Font.) n. comb.

Aspidium oblongifolium Font. Potomac Fl., p. 100, pl. xxi, f. 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

Dryopteris Oerstedii? (Heer) n. comb.

Aspidium Oerstedii? Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 30, pl. xxxiv, f. 3, 4, 1882; Font., Potomac Fl., p. 99, pl. xix, f. 4, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Dryopteris parvifolia (Font.) n. comb.

Aspidium parvifolium Font. Potomac Fl., p. 100, pl. xxi, f. 6; xxiv, f. 8; xxv, f. 10; xxvi, f. 1, 14, 16, 17, 1889.

Potomac formation: Fredericksburg, Dutch Gap Canal, Virginia.

Dryopteris pinnatifida (Font.) n. comb.

Aspidium pinnatifidum Font. Potomac Fl., p. 101, pl. xxi, f. 15, 1889.

Potomac formation: Bank near Brooke, Virginia.

Dryopteris (Lastrea) polypodioides? (Ett.) n. comb.

Lastrea (*Goniopteris*) *polypodioides*? (Ett.) Lesquereux. *Tert. Fl.*, p. 57, pl. iv, f. 11, 12, 1878.

Goniopteris polypodioides Ett. Lesquereux. *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 394, 1873 [1874].

Laramie group: Sand Creek, Colorado.

Dryopteris virginica (Font.) n. comb.

Aspidium virginicum Font. *Potomac Fl.*, p. 97, pl. xv, f. 7; xxi, f. 14.

Potomac formation: Near Potomac Run and near Brooke, Virginia.

Dryopteris sp.

Aspidium sp., Kn. *Bull. Geol. Soc. Am.*, vol. viii, p. 140, 1897.

Laramie group?: North Fork Dutton Creek, Wyoming.

ECHITONIUM Unger. *Syn. Pl. Foss.*, p. 230, 1845.

Echitonium *Sophiæ* O. Web. *Palæontogr.*, vol. ii, p. 187, pl. xx, f. 17, 1852; *Lx.*, *Am. Journ. Sci.*, vol. xlv, f. 206, 1868; *Proc. U. S. Nat. Mus.*, vol. x, p. 41, 1887.

Laramie group?: Marshalls, Colorado.

——?: White River, Dakota.

ELÆAGNUS (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

Elæagnus inæqualis *Lx.* *Am. Journ. Sci.*, vol. xxvii, p. 364, 1859; *Geol. Tenn.*, p. 428, pl. K, f. 7, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

ELÆODENDRON Jacques f. *Nova Acta Helv.*, vol. i, p. 36, 1787.

Elæodendron helveticum Heer. *Fl. Tert. Helv.*, vol. iii, p. 71, pl. cxxii, f. 5, 1859; *Lx.*, *Proc. U. S. Nat. Mus.*, vol. v, p. 449, 1882 [1883].

Eocene?: Unga Island, Alaska.

Elæodendron polymorphum Ward. *Bull. U. S. Geol. Surv.*, no. 37, p. 84, pl. xxxviii, f. 1-7, 1887.

Fort Union group: Burns Ranch, Montana.

Elæodendron serrulatum Ward. *Bull. U. S. Geol. Surv.*, no. 37, p. 83, pl. xxxvii, f. 3-5, 1887.

Fort Union group: Burns Ranch and Seven-Mile Creek, Montana.

Elæodendron speciosum *Lx.* *Fl. Dak. Gr.*, p. 175, pl. xxxvi, f. 2, 3, 1892.

Dakota group: Kansas.

ELODEA Michaux. *Fl. Bor. Am.*, vol. i, p. 20, 1803.

Elodea canadensis ? *Mx.* *Penhallow, Bull. Geol. Soc. Am.*, vol. i, p. 325, 1890.

Pleistocene: Rolling River, Manitoba.

EMBOTHRITES Unger. *Gen. et Sp. Pl. Foss.*, p. 428, 1850.

Embothrites ? *daphneoides* *Lx.* *Cret. and Tert. Fl.*, p. 51, 1883.

Embothrium ? *daphneoides* *Lx.* *Cret. Fl.*, p. 87, pl. xxx, f. 10, 1874.

Dakota group: Kansas.

Embothrium ? *daphneoides* *Lx.* = *Embothrites* ? *daphneoides*.

ENCEPHALARTOPSIS Fontaine. Potomac Fl., p. 174, 1889.

Encephalartopsis nervosa Font. Potomac Fl., p. 174, pl. lxx, f. 4; lxxi, f. 3, 4; lxxii, f. 3, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

ENCEPHALARTOS Lehman. Pugill., vol. vi, p. 3, 1834.

Encephalartos cretaceus Lx. Fl. Dak. Gr., p. 29, pl. i, f. 12, 1891.

Dakota group: Kansas.

ENGELHARDTIA Leschen. In Blume, Bijdr., 528, 1825.

Engelhardtia oxyptera Sap. Études (Ann. d. Sci. Nat., 5th ser., Bot., vol. 4), p. 344, pl. xii, f. 2, 1865; Lx., Cret. and Tert. Fl., p. 192, 1883.

Green River group: Florissant, Colorado.

EQUISETUM (Tournefort) Linnæus. Gen. Pl., p. 322, 1737.

Equisetum arvense L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

Equisetum globulosum Lx. Proc. U. S. Nat. Mus., vol. v, p. 444, 1882 [1883]; Cret. and Tert. Fl., p. 222, pl. xlviii, f. 3, 1883.

Eocene?: Alaska.

Fort Union group: Bad Lands, Dakota.

Equisetum Haydenii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 284, 1871 [1872]; Tert. Fl., p. 67, pl. vi, f. 2-4, 1878.

Green River group: Barrell Springs, Wyoming.

Denver group?: Carbon, Wyoming.

Equisetum Hornii Lx. Proc. U. S. Nat. Mus., vol. xi, p. 23, 1888.

Eocene?: Cherry Creek, Oregon.

Equisetum lævigatum Lx. Tert. Fl., p. 68, pl. vi, f. 6, 7, 1878.

Equisetum? lævigatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874].

Laramie group: Golden and Sand Creek, Colorado.

Equisetum Lesquereuxii nom. nov.

Equisetum limosum? L.* Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1871 [1872]; Tert. Fl., p. 69, pl. vi, f. 5, 1878. [*Not the living *E. limosum*!]

Miocene?: Yellowstone National Park.

Equisetum limosum L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 71, 1896.

Pleistocene: Greens Creek and Besserer's Wharf, Ottawa River.

Equisetum limosum? L. Lx. = *Equisetum Lesquereuxii*.

Equisetum Lyelli Mantell. Geol. S. E. England 1833, p. 217, 1833;

Font., Potomac Fl., p. 65, pl. i, f. 7; pl. ii, f. 4, 5, 1889; Dn., Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 83, f. 1, 1892 [1893].

Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.

Kootanie: Canada.

Equisetum marylandicum Font. Potomac Fl., p. 65, pl. ii, f. 10, 1889.

Potomac formation: Baltimore, Maryland.

Equisetum nodosum Lx. = *Phragmites* cretaceus.

Equisetum oregonense Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Currant Creek, Oregon.

Equisetum Parlatorii (Heer) Schimp. Pal. Vég., vol. i, p. 261, 1869.

Physagenia Parlatorii Heer. Fl. Tert. Helv., vol. i, p. 109, pl. xlii, f. 2-17, 1885; Dn., Rept. Geol. and Res., near 49th Parallel, Appen. A, p. 329, pl. xvi, f. 3, 4, 1875.

——: Great Valley, Canada.

Equisetum robustum Newby. Bost. Journ. Nat. Hist., vol. vii, p. 513, 1863.

——: Bellingham Bay, Washington.

Equisetum scirpoides Mx. Dn., Can. Nat., vol. iii, new ser., p. 73, 1868; Geol. Hist. Pl., p. 230, 1888.

Pleistocene: Greens Creek, Ottawa River, Canada.

Equisetum similkamense Dn. Geol. Surv. Canada, Rept. of Progress 1877-78, p. 186, pl. B, 1878; Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 76, f. 1-1*d*, 1890.

Eocene?: Similkameen Valley, British Columbia.

Equisetum sylvaticum? L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890.

Pleistocene: Canada.

Equisetum texense Font. Proc. U. S. Nat. Mus., vol. xvi, p. 263, pl. xxxvi, f. 1, 1893.

Trinity division: Glenrose, Texas.

Knoxville beds: Tehama County, California.

Equisetum virginicum Font. Potomac Fl., p. 63, pl. i, f. 1-6, 8; pl. ii, f. 1-3, 6, 7, 9, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Equisetum wyomingense Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874]; Tert. Fl., p. 69, pl. vi, f. 8-11, 1878.

Green River group: Green River, Wyoming.

Equisetum sp., Dn. Rept. Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Canadian Upper Laramie: Porcupine Creek.

Equisetum sp., Paisley. Can. Nat., 2d ser., vol. vii, p. 270, 1875.

Post pliocene: Bathurst, New Brunswick.

Equisetum, rootlets of, Lx. Rept. on Clays in N. J., p. 28, 1878.

Amboy clay: Washington, New Jersey.

Equisetum sp. Lx. Cret. and Tert. Fl., p. 239, pl. i, f. 8, 1883.

Miocene: Corral Hollow, California.

- Equisetum** sp., Lx. Cret. and Tert. Fl., p. 239, pl. 1, f. 7, 1883.
Miocene: Contra Costa, California.
- Equisetum** sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 22, pl. i, f. 2, 1886 [1887].
Canadian Upper Laramie: Great Valley, Canada.
- Equisetum** sp., Font. Potomac Fl., p. 66, pl. clxx, f. 8, 1889.
Potomac formation: Baltimore, Maryland.
- Equisetum** sp., Font. Potomac Fl., p. 65, pl. ii, f. 8, 1889.
Potomac formation: Fredericksburg, Virginia.
- Equisetum** sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 71, 1896.
Pleistocene: Scarboro Heights, Ontario.
- Equisetum** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.
Laramie group: Lance Creek, Converse County, Wyoming.
- Equisetum** sp., Kn. Eighteenth Ann. Rep. U. S. Geol. Surv., pt. iii, p. 722, 1898.
Payette formation: Idaho City, Idaho.
- EREMOPHYLLUM** Lesquereux. Cret. Fl., p. 107, 1878.
- Eremophyllum fimbriatum** Lx. Cret. Fl., p. 107, pl. viii, f. 1, 1874.
Ficus? fimbriatus Lx. Am. Journ. Sci., vol. xlv, p. 96, 1868.
Dakota group: Decatur, Nebraska.
- ERIOCAULON** Linnaeus. Gen., ed. ii, p. 35, 1742.
- Eriocaulon? porosum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]; Tert. Fl., p. 106, pl. xvi, f. 2, 2a, 1878.
Laramie group: Sand Creek and Murpheys, near Golden, Colorado.
- EUCALYPTOPHYLLUM** Fontaine. Potomac Fl., f. 325, 1889.
- Eucalyptophyllum oblongifolium** Font. Potomac Fl., p. 325, pl. clxii, f. 4, 1889.
Potomac formation: Near Brooke, Virginia.
- EUCALYPTUS** L'Héritier. Sert. Angl., p. 18, 1788.
- Eucalyptus? americana** Lx. Tert. Fl., p. 296, pl. lix, f. 11, 12, 1878.
Eucalyptus americanus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 7, 1871 [1872].
Green River group: Green River Station, Wyoming.
- Eucalyptus? angustifolia** Newby. Fl. Amboy Clays, p. 111, pl. xxxii, f. 1, 6, 7, 1895 [1896].
Amboy clay: South Amboy, New Jersey.
- Eucalyptus? attenuata** Newby. Fl. Amboy Clays, p. 111, pl. xvi, f. 2, 3, 5, 1895 [1896].
Amboy clay: South Amboy, New Jersey.
- Eucalyptus dakotensis** Lx. Fl. Dak. Gr., p. 137, pl. xxxvii, f. 14-19, 1892.
Dakota group: Kansas.

Eucalyptus Geinitzi Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 93, pl. xix, f. 1c; lxxv, f. 4-9; xlvi, f. 12 c, d, 13, 1882; Lx., Fl. Dak. Gr., p. 138, pl. xxxvii, f. 20, 1892; Newby., Fl. Amboy Clays, p. 110, pl. xxxii, f. 2, 12, 15, 16, 1895 [1896].

Myrtophyllum (Eucalyptus?) Geinitzi Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 116. pl. xxxii, f. 14-17; xxxiii, f. 6b, 1874.

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Staten Island; Glenn Cove, Long Island; Marthas Vineyard.

Eucalyptus Gouldii Ward. Bull. Torr. Bot. Club, vol. xxiv, p. 576, f. (in text) 1, 2, 1897.

Dakota group: Clark County, Kansas.

Eucalyptus Hæringiana? Ett. Abhandl. d. k. k. Geol. Reichsanstalt, vol. ii, pt. 3, p. 84, pl. xxxviii, f. 2-25, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1872 [1873]; Tert. Fl., p. 296, pl. lix, f. 10, 1878.

Laramie group: Black Buttes, Wyoming.

Eucalyptus? nervosa Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 56, pl. 174, f. 10, 1894. Newby. Fl. Amboy Clays, p. 112, pl. xxxii, f. 3-5, 8, 1895 [1896].

Cretaceous: Sea Cliff, Long Island.

Eucalyptus? parvifolia Newby. Fl. Amboy Clays, p. 112, pl. xxxii, f. 9, 10, 1895 [1896.]

Amboy clay: South Amboy, New Jersey.

EUGENIA Micheli ex Linnæus. Syst., ed. i., 1735.

Eugenia primæva Lx. Fl. Dak. Gr., p. 137, pl. liii, f. 5-9, 1892.

Dakota group: Kansas.

EUONYMUS Linnæus. Hort. Cliff, p. 39, 1737.

Euonymus flexifolius Lx. Cret. and Tert. Fl., p. 183, pl. xxxviii, f. 13, 1883.

Green River group: Uinta County, formerly but wrongfully called Randolph County, Wyoming.

Euonymus xantholithensis Ward. Bull. U. S. Geol. Surv., no. 37, p. 82, pl. xxxvii, f. 1, 2, 1887.

Fort Union group: Burns Ranch, Montana.

FAGOPHYLLUM Nathorst. Pal. Abhandl. v. Dames u. Kayser, vol. iv, heft 3, p. 5, 1888.

Fagophyllum nervosum Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 58, pl. vii, f. 16, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

Fagophyllum retosum Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 15, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

FAGUS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Fagus Antipoffi Abich. Mém. Acad. Sci. St. Petersburg, ser. vi, Sci. math. et physiq., vol. vii, p. (35 of reprint) 572, pl. viii, f. 2, 1858; Heer, Fl. Foss. Arct., vol. ii, abt. ii, p. 30, pl. v, f. 4a; vii, f. 4-8; viii, f. 1, 1869.

Eocene?: Port Graham, Alaska.

Miocene: Table Mountain, California.

Laramie group?: Point of Rocks, Wyoming.

Fagus castaneæfolia Ung. = *Castanea castaneæfolia*.

Fagus cretacea Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Kansas.

Fagus Deucalionis Ung. Syn. Pl. Foss., p. 218, 1845; Lx., Proc. U. S. Nat. Mus., vol. v, p. 446, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Fagus Deucalionis Ung. Lx., Ann. Rept., 1871, p. 292 = Unknown. [Not afterwards referred to by Lesquereux.]

Laramie group?: Evanston, Wyoming.

Fagus Feroniæ Ung. Syn. Pl. Foss., p. 219, 1845; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 413, 1873 [1874]; Tert. Fl., p. 146, pl. xix, f. 1-3, 1878.

Green River group: Elko Station, Nevada.

Eocene?: Port Graham, Alaska.

Fagus ferruginea Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 11, 1869; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Pleistocene?: Somerville, Fayette County, Tennessee.

Glacial: Morgantown, West Virginia.

Fagus Hitchcockii Lx. Am. Journ. Sci., vol. xxxii, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 126, 127, 1861.

——: Brandon, Vermont.

Fagus macrophylla Ung. Denkschr. Wien. Akad., vol. vii, p. (19 of reprint) 175, pl. ii, f. 10, 1854; Heer, Fl. Foss. Arct., vol. ii, abt. ii, p. 31, pl. viii, f. 2, 1869.

Eocene?: Port Graham, Alaska.

Fagus orbiculata Lx. Fl. Dak. Gr., p. 51, pl. xlvii, f. 6, 1892.

Dakota group: Ellsworth County, Kansas.

Fagus polycladus Lx. Am. Journ. Sci., vol. xlvi, p. 95, 1868.

Dakota group: Decatur, Nebraska; Kansas.

Fagus proto-nucifera Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 6, 6a, 1882 [1883].

——: Peace River, Northwest Territory.

Fagus pseudo-ferruginea Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 3, pl. ii, f. 14, 1878.

Miocene: Chalk Bluffs, California.

FEILDENIOPSIS Fontaine. Potomac Fl., p. 204, 1889.

Feildeniopsis crassinervis Font. Potomac Fl., p. 205, pl. lxxxvi, f. 5, 1889.

Potomac formation: Kankeys, Virginia.

FICOPHYLLUM Fontaine. Potomac Fl., p. 290, 1889.

Ficophyllum crassinerve Font. Potomac Fl., p. 291, pl. cxliv, f. 3; cxlv, f. 3; cxlvi, f. 1; cxlvii, f. 4; cxlviii, f. 1, 2, 4; clvii, f. 4; clxxiii, f. 10, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Deep Bottom, Virginia.

Ficophyllum eucalyptoides Font. Potomac Fl., p. 294, pl. cxiv, f. 1, 2, 1889.

Potomac formation: Near Brooke, Virginia.

Ficophyllum serratum Font. Potomac Fl., p. 294, pl. cxlv, f. 2; cxix, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

Ficophyllum tenuinerve Font. Potomac Fl., p. 292, pl. cxl, f. 3; cxli, f. 2; cxlx, f. 1, 4; cxlvii, f. 2; cxlix, f. 1, 3, 5; clvi, f. 1, 1889.

Potomac formation: Near Potomac Run and Fredericksburg, Virginia.

FICUS Tournefort ex Linnæus. Syst., ed. v, 1735.

Ficus aligera Lx. Fl. Dak. Gr., p. 84, pl. x, f. 3-6, 1892.

Dakota group: Cloud County, Kansas.

Ficus alkalina Lx. Cret. and Tert. Fl., p. 164, pl. xlv, f. 7-9, 1883.

Green River group: Alkali Station, Wyoming.

Ficus alaskana Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Eocene?: Cook Inlet and Admiralty Inlet, Alaska.

Ficus Andræi Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

Ficus? angustata Lx. Cret. and Tert. Fl., p. 47, 1883.

Dakota group: Bluff Creek, Kansas.

Ficus appendiculata Heer. Fl. Tert. Helv., vol. ii, p. 67, pl. lxxxv, f. 12, 13, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 31, 1888.

Eocene?: Lassen County, California.

Ficus arenacea Lx., ex. p.=*Ficus lanceolata*.

Ficus arenacea Lx., ex. p.=*Ficus uncata*.

Ficus arenacea brevipetiolata Lx.=*Ficus uncata*.

Ficus artocarpoides Lx. Cret. and Tert. Fl., p. 227, pl. xlvii, f. 1-5, 1883.

Fort Union group: Bad Lands, Dakota.

Ficus asarifolia Ett. Denkschr. d. k. Akad. Wissensch., vol. xxvi, p. 156, 1867; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 366, 1875 [1876]; Ann. Rept., op. cit., p. 378, 1872 [1873]; Tert. Fl., p. 207, pl. lxi, f. 18-21, 1878.

Denver beds?: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks.

Ficus asarifolia minor Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 367, 1875 [1876]; Tert. Fl., p. 208, 1878.

Montana formation: Point of Rocks, Wyoming.

Ficus asiminæfolia Lx. Cret. and Tert. Fl., p. 250, pl. lvi, f. 1-3, 1883.

Miocene?: Rock Corral, Placer County, California.

Ficus atavina Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 69, 1882; Lx., Proc. U. S. Nat. Mus., vol. x, p. 40, 1887.

———: Upper Kanab Valley, Utah.

Ficus auriculata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]; Tert. Fl., p. 206, pl. xxx, f. 4-6, 1878.

Ficus truncata ? Lx. [nec Heer, 1859]. Ann. Rept., op. cit., p. 400, 1873 [1874].

Ficus subtruncata Lx. Tert. Fl., p. 205, pl. xxx, f. 7-9, 1878.

Laramie group: Golden, Colorado.

Livingston beds: Bozeman coal field, Montana.

Ficus austiniana Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 14, pl. A, f. 5, 1893.

Dakota group: Cottonwood River, Minnesota.

Ficus Beckwithii Lx. Cret. and Tert. Fl., p. 46, pl. xvi, f. 5; pl. xvii, f. 3, 4, 1883.

Dakota group: Morrison, Colorado.

Ficus Berthoudi Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 49, 1888.

Denver group: Golden, Colorado.

Ficus Berthoudi Lx. Fl. Dak. Gr., p. 78, 1892 = *Ficus Lesquereuxii*.

Ficus cinnamomoides Lx. Trans. Am. Phil. Soc., vol. xiii, p. 417, pl. xvii, f. 8, 1869.

Eolignitic: Mississippi.

Ficus Clintoni Lx. = *Ficus planicostata* Clintoni.

Ficus Condoni Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Ficus contorta Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 31, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Ficus ? corylifolius Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

Ficus crassipes Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 70, pl. xvii, f. 9a; pl. xxiv, f. 1, 2, 1882; Lx., Fl. Dak. Gr., p. 79, pl. xiii, f. 3, 1892.

Proteoids crassipes Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 110, 1874.

Dakota group: Kansas.

Ficus Crossii Ward = **Ficus uncata**.

Ficus? cuneatus Newby. Bost. Journ. Nat. Hist., vol. vii, p. 524, 1863.

Cretaceous?: Orcas Island, Washington.

Ficus dalmatica Ett. Denkschr. d. Wien. Akad., vol. viii, p. 13, pl. vii, f. 11, 1855; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 367, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 303, 1874 [1876]; Tert. Fl., p. 199, pl. lxiii, f. 3-5, 1878.

Laramie group: Coal Creek, Colorado.

Montana formation: Point of Rocks, Wyoming.

Ficus deflexa Lx. Fl. Dak. Gr., p. 80, pl. iii, f. 13; pl. xvi, f. 3, 1892.

Dakota group: Kansas.

Ficus distorta Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 5, 1874 [1876].

Dakota group: Fort Harker, Kansas.

Ficus? fimbriatus Lx. = **Eremophyllum fimbriatum**.

Ficus Fredericksburgensis Font. Potomac Fl., p. 295, pl. cxlviii, f. 3, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Ficus Gaudini Lx. = **Ficus uncata**.

Ficus glascœana Lx. Cret. and Tert. Fl., p. 48, 1883; Fl. Dak. Gr., p. 76, pl. xiii, f. 1, 2, 1892.

Dakota group: Glascoe, Kansas.

Ficus goldiana Lx. = **Ficus planicostata** Clintoni.

Ficus? Halliana Lx. Cret. Fl., p. 68, pl. xxviii, f. 3, 9, 1874.

Dakota group: Minnesota.

Ficus Haydenii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394; 1872 [1873]; Tert. Fl., p. 197, pl. xxx, f. 1, 1878.

Laramie group: Black Buttes, Wyoming.

Ficus inæqualis Lx. Fl. Dak. Gr., p. 82, pl. xlix, f. 6-8; pl. l, f. 3, 1892.

Dakota group: Kansas.

Ficus irregularis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 368, 1875 [1876]; Tert. Fl., p. 196, pl. xxxiv, f. 4-7; pl. lxiii, f. 9, 1878.

Ulmus? irregularis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 378, 1872 [1873].

Denver group: Golden, Colorado.

Laramie group: Golden, Colorado; Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Ficus Jynx Ung. Gen. et Sp. Pl. Foss., p. 413, 1850. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 414, 1873 [1874]; Tert. Fl., p. 193, pl. xxviii, f. 6, 1878.

Green-River group: Elko Station, Nevada.

Ficus Krausiana Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 15, pl. v. f. 3-6, 1869; Lx., Fl. Dak. Gr., p. 81, pl. 1, f. 5, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

Ficus lanceolata Heer. Fl. Tert. Helv., vol. ii, p. 62, pl. lxxxi, f. 2-5, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]; Tert. Fl., p. 192, pl. xxviii, f. 1-5, 1878.

Ficus arenacea Lx., ex. p. Ann. Rept., loc. cit., p. 300; Tert. Fl., p. 195, pl. xxix, f. 1, 4, 1878.

Laramie group: Marshall's mine, Coal Creek, and near Mount Carbon, Colorado.

Ficus lanceolato-acuminata Ett. Denkschr. Wien. Akad., vol. xxxii (Foss. Fl. v. Sagor), p. 182, pl. vi, f. 3, 4, 1872; Lx., Fl. Dak. Gr., p. 85, pl. xiii, f. 4, 1892.

Dakota group: Kansas.

Ficus latifolia (Lx.) n. comb.

Ficus planicostata latifolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1872 [1873]; Tert. Fl., p. 202, pl. xxi, f. 9, 1878.

Laramie group: Golden and Marshalls, Colorado; Black Buttes, Wyoming.

Ficus laurophylla Lx. = *Ficus reticulata*.

Ficus laurophyllidia Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. x, f. 37, 1893 [1894].

Upper Cretaceous: Wellington mine, Nanaimo.

Ficus Lesquereuxii nom. nov.

Ficus Berthoudi * Lx. Fl. Dak. Gr. p. 78, pl. xii, f. 3, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895. [*Name preoccupied by *F. Berthoudi* of Lesquereux, 1888.]

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

Ficus limpida Ward. Bull. U. S. Geol. Surv., no. 37, p. 42, pl. xxii, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

Ficus macrophylla Lx. Fl. Dak. Gr., p. 76, pl. xi, f. 1, 1892.

Dakota group: Kansas.

Ficus magnoliæfolia Lx. Cret. and Tert. Fl., p. 47, pl. xvii, f. 5, 6, 1883.

Dakota group: Morrison, Colorado.

Upper Cretaceous: Vancouver Island.

Ficus maxima Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 5, 1882 [1883].

— : Coal Brook, Northwest Territory.

Ficus melanophylla Lx. Fl. Dak. Gr., p. 83, pl. 1, f. 2, 1892.

Dakota group: Kansas.

Ficus membranacea Newby. Proc. U. S. Nat. Mus., vol. v., p. 512, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Ficus microphylla Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 18, pl. iv, f. 10, 11, 1878.

Miocene: Table Mountain and Shasta County, California.

Ficus Mudgei Lx. Fl. Dak. Gr., p. 83, pl. xii, f. 4, 1892.

Dakota group: Kansas.

Ficus multinervis Heer. Fl. Tert. Helv., vol. ii, p. 63, pl. lxxxi, f. 6-10, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]; Tert. Fl., p. 194, pl. xxviii, f. 7, 8, 1878.

Laramie group: Coal Creek, Colorado, etc.

———?: Graves County, Kentucky.

Ficus myricoides Hollick. In Newby., Fl. Amboy Clays, p. 71, pl. xxxii, f. 18; xli, f. 8, 9, 1895 [1896].

Amboy clay: No location.

Ficus (Protoficus) nervosa Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Laramie group?: Evanston, Wyoming.

Ficus oblanceolata Lx. = *Pistacia oblanceolata*.

Ficus occidentalis Lx. Tert. Fl., p. 200, pl. xxxii, f. 4, 1878.

Dombeyopsis occidentalis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873].

Denver group: Golden, Colorado.

Ficus? oregoniana Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. ix, f. 3, 1888.

Miocene: John Day Valley, Oregon.

Ficus ovalis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Tert. Fl., p. 198, pl. xxx, f. 2, 1878.

———?: Pleasant Park, Colorado.

Ficus ovata Newby. Fl. Amboy Clays, p. 70, pl. xxiv, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Ficus planicostata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1872 [1873]; Tert. Fl., p. 201, pl. xxxi, f. 1-8, 10-12, 1878.

Denver beds: Golden, Colorado.

Laramie group: Coal Creek, Marshalls, Colorado; Black Buttes, Wyoming.

Ficus planicostata Clintoni (Lx.) n. comb.

Ficus planicostata goldiana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874]; Tert. Fl., p. 202, pl. xxxiii, f. 1, 1a, 2, 3, 1878.

Ficus Clintoni Lx. Ann. Rept., loc. cit., p. 393, 1872 [1873].

Denver beds: Golden, Colorado.

Eoligintic: Cross Lake, Louisiana.

Ficus planicostata goldiana Lx. = *Ficus planicostata Clintoni*.

Ficus planicostata latifolia Lx. = *Ficus latifolia*.

Ficus populina Heer. Fl. Tert. Helv., vol. ii, p. 66, pl. lxxxv, f. 1-7; lxxxvi, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 6, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Eocene?: Green River, Wyoming.

- Ficus præcursor** Lx. Fl. Dak. Gr., p. 81, pl. xlix, f. 5, 1892.
Dakota group: Kansas.
- Ficus primordialis** Heer. Phyll. Crét. d. Nebr., p. 16, pl. iii, f. 1, 1866.
Dakota group; Tekamah, Nebraska.
- Ficus proteoides** Lx. Fl. Dak. Gr., p. 77, pl. xii, f. 2, 1892.
Dakota group: Kansas.
- Ficus protogæa?** Ett. Sitzb. Wien. Akad., vol. lv, p. 249, pl. ii, f. 5, 1867; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 51, pl. 175, f. 4, 1894.
Cretaceous: Glen Cove, Long Island.
- Ficus pseudo-populus** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 204, pl. xxxiv, f. 1a, 2, 1878.
Green River group: Unknown.
Laramie group?: Evanston, Wyoming.
- Ficus reticulata** (Lx.) n. comb.
Laurophyllum reticulatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873]; Cret. Fl., p. 76, pl. xv, f. 4, 5, 1874.
Ficus laurophyllum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 7, 1874 [1876]; Cret. and Tert. Fl., p. 49, pl. i, f. 12, 13, 1878; Fl. Dak. Gr., p. 85, 1892.
Dakota group: Kansas.
- Ficus?** rhomboideus Lx. = Phyllites rhomboideus.
- Ficus rotundata** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 32, 33a, 1893 [1894].
Upper Cretaceous: Vancouver Island.
- Ficus Schimper** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 417, pl. xviii, f. 1-3, 1869.
Eolignitic: Mississippi.
- Ficus shastensis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 28, pl. xi, f. 3, 1888.
Miocene: Shasta County, California.
- Ficus sinuosa** Ward. Bull. U. S. Geol. Surv., no. 37, p. 41, pl. xxii, f. 2, 1887.
Laramie group: Black Buttes, Wyoming.
- Ficus?** **Smithsoniana** Lx. Tert. Fl., p. 200, pl. xxxii, f. 5, 1878.
Juglans Smithsoniana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872].
Laramie group: Raton Mountains, New Mexico; Mount Carbon, near Morrison, Colorado.
- Ficus sordida** Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 17, pl. iv, f. 6, 7, 1878.
Miocene: Chalk Bluffs, California.
- Ficus speciosissima** Ward. Bull. U. S. Geol. Surv., no. 37, p. 39, pl. xxi, f. 3, 1887.
Montana formation: Point of Rocks, Wyoming.

Ficus spectabilis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]; Tert. Fl., p. 199, pl. xxxiii, f. 4-6, 1878.

Denver group: Golden, Colorado.

Eolignitic: Cross Lake and McLees, Louisiana.

Ficus Sternbergii Lx. Fl. Dak. Gr., p. 82, pl. 1, f. 1, 1892.

Dakota group: Kansas.

Ficus Sternbergii Lx. [1872]=*Persea Sternbergii*.

Ficus subtruncata Lx.=*Ficus auriculata*.

Ficus tenuinervis Lx. Cret. and Tert. Fl., p. 164 pl. xliv, f. 4, 1883.

Green River group: Alkali Station, Wyoming.

Eocene?: Cherry Creek, Oregon.

Ficus tiliaefolia (Al. Br.) Heer. Fl. Tert. Helv., vol. ii, p. 68, pl. lxxxiii, f. 3-12; lxxxiv, f. 1-6; lxxxv, f. 14, 1856; Lx., Tert. Fl., p. 203, 1878.

Cordia? *tiliaefolia* Al. Br. Leonh. and Brown, N. Jahrb., 1845, p. 170, 1845.

Dombeyopsis tiliaefolia (Al. Br.) Ung. Gen. et Sp. Pl. Foss., p. 447, 1850.

Dombeyopsis aequifolia Göpp. Lesquereux, Ann. Rept., op. cit., p. 10, 1871 [1872].

Miocene: California.

Fort Union group: Burns Ranch, Montana.

Denver group: Golden, Colorado.

Laramie group: Many localities.

Ficus truncata? Lx.=*Ficus auriculata*.

Ficus ulmifolia Lx.=*Ficus uncata*.

Ficus uncata Lx. Tert. Fl., p. 197, pl. xxxv, f. 1, 1a, 2, 1878.

Ficus ulmifolia Lx. Ann. Rept. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 14, 1871 [1872].

Ficus arenacea Lx., ex. p. Ann. Rept., loc. cit., p. 300, 1871 [1872].

Ficus arenacea brevipetiolata Lx. Tert. Fl., p. 195, pl. xxix, f. 2, 3, 5, 1878.

Populus monodon Lx. Tert. Fl., p. 180, pl. xxiv, f. 1, 1878.

Ficus Gaudini Lx. Ann. Rept., loc. cit., p. 300, 1871 [1872].

Ficus Crossii Ward. Bull. U. S. Geol. Surv., p. 39, pl. xxi, fig. 2, 1887.

Laramie group: Fishers Peak, New Mexico; Coal Creek, Colorado.

Ficus ? undulata Lx. Fl. Dak. Gr., p. 84, pl. xii, f. 5, 1892.

Dakota group: Kansas.

Ficus Ungerii Lx. Ann. Rept., U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 7, 1871 [1872]; Tert. Fl., p. 195, pl. xxx, f. 3, 1878; Cret. and Tert. Fl., p. 163, pl. xliv, f. 1-3, 1883.

Green River group: Green River?

Ficus viburnifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 42, pl. xxii, f. 4-8, 1887.

Fort Union group: Clear Creek, Montana.

Ficus virginianensis Font. Potomac Fl., p. 295, pl. cxliii, f. 1, 3; cxliv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Ficus wellingtoniae Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 33, 34, 1893 [1894].

Upper Cretaceous: Wellington Mine and Port McNeill, Vancouver Island.

Ficus Willisiana Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 176, f. 2, 5, 1894.

Cretaceous: Glen Cove and Sea Cliff, Long Island.

Ficus Woolsoni Newby. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 33, pl. ii, f. 1, 2c, 1892; Newby., Fl. Amboy Clays, p. 70, pl. xx, f. 3; xxiii, f. 1-6, 1895 [1896].

Cretaceous: Staten Island.

Amboy clay: Woodbridge, Sayreville, New Jersey.

Ficus wyomingiana Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 314, 1874 [1876]; Tert. Fl., p. 205, pl. xxxiv, f. 3, 1878.

Laramie group?: Evanston, Wyoming.

Ficus zizyphoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874].

—— ? : Golden, Colorado.

Ficus ? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 27, 1890.

Eocene?: Similkameen Valley, British Columbia.

Ficus sp., Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Nanaimo, Vancouver Island.

Ficus sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

Ficus sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 141, 1897.

Laramie group ? : "Dutton Creek Coal," Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 141, 1897.

Laramie group ? : "Dutton Creek Coal," Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Laramie group ? : North Fork Dutton Creek, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Laramie group: Rock Springs, Wyoming.

Ficus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

FITTONIA Carruthers. Trans. Linn. Soc. London, vol. xxvi, p. 680, 1868.

FLABELLARIA (comm.) L'Héritier. Stirp. Nov., p. 59, 1785.

Flabellaria communis Lx. = *Flabellaria eocenica*.

Flabellaria eocenica Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]; Tert. Fl., p. 111, pl. xiii, f. 1-3, 1878.

Sabal communis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

Flabellaria communis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876].

Laramie group: Black Buttes, Wyoming; Golden, Colorado.

Flabellaria florissanti Lx. Cret. and Tert. Fl., p. 144, pl. xxiv, f. 1-2a, 1883.

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

Flabellaria latania Rossm. Verstein. Braunkohl. v. Altsattel, p. 39, pl. xi, f. 49, 1840; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]. [Not afterwards recognized by Lesquereux.]

—: Golden, Colorado.

Flabellaria longirachis Ung. Lx. 1873 = *Geonomites tenuirachis*.

Flabellaria? minima Lx. Cret. Fl., p. 56, pl. xxx, f. 12, 1874.

Dakota group: Western Kansas.

Flabellaria zinckeni Heer Lx. 1872 = *Geonomites goldianus*.

FONTAINEA Newberry. Fl. Amboy Clays, p. 94, 1895 [1896.]

Fontainea grandifolia Newby. Fl. Amboy Clays, p. 96, pl. xlv, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

FONTINALIS Linnaeus. Gen. Pl., p. 323, 1737.

Fontinalis pristina Lx. Cret. and Tert. Fl., p. 135, pl. xxi, f. 9, 1883.

Green River group: Florissant, Colorado.

Fontinalis sp., Dn. Can. Nat., vol. iii, new ser., p. 73, 1868.

Pleistocene: Greens Creek, Ottawa River, Canada.

Fontinalis sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

Fragment No. 1 Font. Potomac Fl., p. 190, 1889.

Potomac formation: Between Washington and Baltimore.

Fragment No. 2 Font. Potomac Fl. p. 192, 1889.

Potomac formation: Baltimore, Maryland.

FRAVINUS Tournefort ex Linnæus. Syst., ed. i, 1735.

Fraxinus abbreviata Lx. Cret. and Tert. Fl., p. 170, pl. xxviii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

Fraxinus affinis Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Fraxinus Brownellii Lx. Tert. Fl., p. 230, 1878.

Green River group: South Park, Colorado.

Fraxinus denticulata Heer. Fl. Foss. Arct., vol. i, p. 118, pl. xvi, f. 4, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]; Tert. Fl., p. 228, pl. xl, f. 1, 2, 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group?: Evanston, Wyoming?

Fraxinus eocenica Lx. Tert. Fl., p. 229, 1878; Cret. and Tert. Fl., p. 123, pl. xx, f. 1-3, 1883.

Denver beds: Golden, Colorado.

Fraxinus Heerii Lx. Cret. and Tert. Fl., p. 169, pl. xxxiii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

Fraxinus herendeenensis Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 224, pl. ix, f. 7, 1894.

Eocene?: Herendeen Bay, Alaska.

Fraxinus intigrifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Fraxinus Libbeyi Lx. Cret and Tert. Fl., p. 171, pl. xxvii, f. 5-7, 9, 1883.

Green River group: Florissant, Colorado.

Fraxinus mespilifolia Lx. Cret and Tert. Fl., p. 169, pl. xxxiii, f. 7-12, 1883.

Green River group: Florissant, Colorado.

Fraxinus ? myricæfolia Lx. Cret and Tert. Fl., p. 170, pl. xxxiii, f. 13, 14, 1883.

Green River group: Florissant, Colorado.

Fraxinus prædicta Heer. Fl. Tert. Helv., vol. iii, p. 22, pl. civ, f. 12, 13, 1859; Lx., Ann. Rept., op. cit., p. 414, 1873 [1874]; Tert. Fl., p. 229, pl. xl, f. 3, 1878.

Denver beds: Golden, Colorado.

Green River group: Near Florissant, Colorado.

Fraxinus quadrangulata Michx. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895.

Interglacial: Don Valley, Canada.

Fraxinus Ungerii Lx. Cret. and Tert. Fl., p. 171, 1883.

Green River group: Florissant, Colorado.

Fraxinus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek Coal," Wyoming.

FRENELITES Endlicher. Synop. Conif., p. 273, 1847.

Frenelites Reichii Ett. Hollick, Trans. N.Y. Acad. Sci., vol. xii, p. 29, pl. i, f. 23, 1892.

Cretaceous: Kreischerville, Staten Island; Marthas Vineyard.

FRENELOPSIS Schenk. Palæontographica, vol. xix, p. 13, 1869.

Frenelopsis gracilis Newby. Fl. Amboy Clays, p. 59, pl. xii, f. 1-3a, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Frenelopsis Hoheneggeri (Ett.) Schenk? Palæontographica, vol. xix, heft i, p. 13, pl. iv, f. 5-7; v, f. 1, 2; vi, f. 1-6; vii, f. 1, 1869; Newby., Fl. Amboy Clays, p. 58, pl. xii, f. 4, 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Trinity division: Glenrose, Texas.

Frenelopsis parceramosa Font. Potomac Fl., p. 218, pl. cxi, f. 1-5; cxii, f. 1-5; clxviii, f. 1, 1889.

Potomac formation: Trents Reach, Virginia.

Frenelopsis ramosissima Font. Potomac Fl., p. 215, pl. xcv-xcix; c, f. 1-3; ci, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

Frenelopsis varians Font. Proc. U. S. Nat. Mus., vol. xvi, p. 273, pl. xl, f. 1, 2; pl. xli, f. 1-3a, 1893.

Trinity division: Glenrose, Texas.

Fruit capsules sp., Font. Potomac Fl., p. 272, pl. cxxxv, f. 14, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

FUCUS (Tournefort) Linnæus. Gen. Pl., p. 326, 1737.

Fucus lignitum Lx. Bull. U. S. Geol. and Geog. Surv. Terr., vol. i, p. 364, 1875 [1876]; Tert. Fl., p. 42, pl. lxi, f. 24, 24a, 1878.

Montana formation: Point of Rocks, Wyoming.

Fort Union group: Burns Ranch, Montana.

Fucus digitatus Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 71, 1896.

Fucus sp., Penhallow. Bull. Geol. Soc. Am., vol. i, p. 332, 1890.

Pleistocene: Greens Creek and Besserer wharf, Ottawa River.

Fucus sp., Penhallow = Fucus digitatus.

GALLA Ludwig. Palæontogr., vol. v, p. 108, 1857.

Galla quercina Lx. Fl. Dak. Gr., p. 58, pl. vii, f. 2, 1892.

Dakota group: Kansas.

GAYLUSSACCIA Humbolt, Bonpland, and Kunth. Nov. Gen. et Sp., vol. iii, p. 275, 1818.

Gaylussaccia resinosa T. and G. Dn., Can. Nat., vol. iii, new ser., p. 71, f. (in text.) 1, 1868; Geol. Hist. Pl., p. 228, f. 77, 1888.

Pleistocene: Greens Creek, Ottawa River, Canada.

GEINITZIA Endlicher. Synops. Conif., p. 280, 1847.

Geinitzia formosa Heer. Neue Denkschr. Schweiz. Ges., vol. xxiv, p. 6, pl. i, f. 9, pl. ii, 1871; Newby., Fl. Amboy Clays, p. 51, pl. ix, f. 9, 1895 [1896].

Amboy clay: New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Geinitzia sp., Newby. Proc. Lyc. Nat. Hist. N. Y., 2d ser., Jan. 3 to Mar. 3, 1873, p. 10, 1873.

Cretaceous: Keyport, New Jersey.

Geinitzia Heer, species? Lx., Cret. Fl., p. 54, 1874.

Dakota group: Sioux City, Iowa.

GEONOMITES Visiani. Mem. dell' Istituto Veneto (Palmæ Pin-natæ Tertiariæ) 1864, p. 456, 1864.

Geonomites goldianus Lx. Tert. Fl., p. 115, pl. iv, f. 9, 1878.

Palmacites goldianus Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

Flabellaria Zinckeni Heer. Lesquereux, Ann. Rept., op. cit., p. 377, 1872 [1873]; Tert. Fl., p. 110, pl. ix, f. 6-8, 1878.

Denver group?: Golden, Colorado.

Green River group?: Barrell Springs, Wyoming.

Geonomites graminifolius Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

Geonomites Schimper Lx. Tert. Fl., p. 116, pl. x, f. 1, 1878.

Laramie group?: Yellowstone National Park.

Miocene?: Contra Costa, California.

Geonomites tenuirachis Lx. Tert. Fl., p. 117, pl. xi, f. 1, 1878.

Flabellaria longirhachis? Ung. Gen. et. Sp. Pl. Foss., p. 332, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874].

Laramie group: Raton Mountains, New Mexico.

Geonomites Unger Lx. Tert. Fl., p. 118, pl. xi, f. 2, 1878.

Laramie group: Raton Mountains, New Mexico.

GINKGO Linnæus. Mant., ii, p. 313, 1771.

Ginkgo adiantoides (Ung.) Heer. Fl. Foss. Aret., vol. v, abt. iii, p. 21 pl. ii, f. 7-10, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 15, pl. i, f. 5, 6, 1887.

Salisburia adiantoides Ung. Synop. Pl. Foss., p. 211, 1845.

Livingston beds: Bozeman coal field, Montana.

Fort Union group: Seven-Mile Creek, Montana; Similkameen River, British Columbia.

Ginkgo baynesiana (Dn.) n. comb.

Salisburia baynesiana Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 21, 21a, 1882 [1883].

Upper Cretaceous: Baynes Sound and Beaver Harbor, Vancouver Island.

Ginkgo? binervata (Lx.) n. comb.

Salisburia binervata Lx. Trans. Am. Phil. Soc., vol. xiii, p. 412, pl. xv, f. 3-6, 1869.

Eolignitic: Mississippi.

Ginkgo laramiensis Ward. Science, vol. v, p. 496, f. 7, 1885; Bull. U. S. Geol. Surv., no. 37, p. 15, pl. i, f. 4, 1887.

Montana formation: Point of Rocks, Wyoming.

Ginkgo lepida Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 62, pl. xii; vii, f. 7, 1876.

Salisburia (*Ginkgo*) *lepida* Heer. Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 2, 1885 [1886].

Kootanie: Martin and Coal Creek, British Columbia.

Ginkgo nana (Dn.) n. comb.

Salisburia (*Ginkgo*) *nana* Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 3, 1885 [1886].

Kootanie: Coal Creek, British Columbia.

Ginkgo pusilla (Dn.) n. comb.

Salisburia *pusilla* Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 11-13, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

Ginkgo sibirica Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 61, pl. vii, f. 6; ix, f. 5f; xi, 1876.

Salisburia (*Ginkgo*) *sibirica* Heer. Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 1, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

Ginkgo sp.

Carpites *myricarum* Lx. Tert. Fl., p. 303, pl. ix, f. 8-11, 1878.

Laramie group: Black Buttes, Wyoming.

Ginkgo sp. (Dn.) n. comb.

Salisburia sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 18, 1885 [1886].

Canadian Upper Laramie: Near Calgary, Canada.

Ginkgo sp.

Salisburia, nuts of, Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 4, 1885 [1886].

Kootanie: Kootanie series, British Columbia (no locality).

Ginkgo sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: South Saskatchewan; West of Medicine Hat.

Ginkgo sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Canadian Upper Laramie: Souris River, Mackenzie River.

GLEDITSCHIA Clayton, ex Linnæus. Gen., ed. ii, p. 480, 1742.

Gleditschia triacanthos L. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

GLEICHENIA Smith. Mem. Ac. Turin, vol. v, p. 418, 1791.

Gleichenia Gieseckiana ? Heer. Fl. Foss. Arct., vol. i, p. 78, pl. xliii, f. 1a, 2a, 3a, 1868; Fl. Amboy Clays, p. 36, pl. iv, f. 12, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Gleichenia gracilis Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 52, pl. x, f. 1-11, 1874; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 4, 1885 [1886].

Mill Creek series: Mill Creek.

Gleichenia Kurriana Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 6, pl. ii, f. 1-4, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 421, 1872 [1873].

Mill Creek series: Mill Creek.

Dakota group: Fort Harker, Kansas.

Gleichenia micromera Heer? Fl. Foss. Arct., vol. iii, abt. ii, p. 55, pl. x, f. 14, 15, 1874; Fl. Amboy Clays, p. 36, pl. iii, f. 6, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Gleichenia Nordenskiöldi ? Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 50, pl. ix, f. 6-12, 1874; Font., Potomac Fl., p. 119, pl. xxi, f. 11, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Dakota group: Kansas.

Gleichenia Zippei Heer? Fl. Foss. Arct., vol. i, p. 79, pl. xlviii, f. 4, 1868; Fl. Amboy Clays, p. 37, pl. iii, f. 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

GLOSSOZAMITES Schimper. Pal. Vég., vol. ii, p. 163, 1870.

Glossozamites distans Font. Potomac Fl., p. 176, pl. lxviii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Glossozamites Klipsteini (Dunk.) Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Cyclopteris Klipsteini Dunk. Monogr. d. Nordd. Wealdenb., p. 11, pl. ix, f. 7, 1846.

Horsetown beds: Tehama and Shasta counties, California.

GLYPTOSTROBUS Endlicher. Synop. Conif., p. 69, 1847.

Glyptostrobus brookense (Font.) Ward. 15th Ann. Rept. U. S. Geol. Surv., p. 359, 1895.

Taxodium (Glyptostrobus) brookense Font. Potomac Fl., p. 254, pl. cxxii, f.

1; cxxiv, f. 3-9; cxxxi, f. 5; clxv, f. 1-3; clxvi, f. 4, 7; clxvii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

Glyptostrobus brookense angustifolium (Font.) n. comb.

Taxodium (Glyptostrobus) brookense angustifolium Font. Potomac Fl., p. 256, pl. clxvii, f. 1, 1889.

Potomac formation: White House Bluff.

Glyptostrobus europæus (Brongn.) Heer. Fl. Tert. Helv., vol. i, p. 51, pl. xix; xx, 1855; Lx., Tert. Fl., p. 74, pl. vii, f. 1, 2, 1878.

Taxodium europæum Brongn. Ann. d. Sci. Nat., vol. xxx, p. 168, 1833.

Taxodites europæus (Brongn.) Endl. Synop. Conif., p. 278, 1847.

Miocene?: Birch Bay, British Columbia.

Eocene?: Alaska.

Green River group: Florissant, Colorado.

Fort Union group: Mouth of Yellowstone, Montana.

Glyptostrobus europæus Unger Heer. Fl. Tert. Helv., vol. iii, p. 159, 1859; Lx., Cret. and Tert. Fl., p. 222, pl. xlvf, f. 1-1c, 1883.

Glyptostrobus Unger Heer. Fl. Tert. Helv., vol. i, p. 52, 1855.

Eocene?: Alaska.

Fort Union group: Bad Lands, Dakota; Porcupine Creek.

Glyptostrobus fastigiatus (Font.) Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 380, 1895.

Taxodium (*Glyptostrobus*) *fastigiatum* Font. Potomac Fl., p. 253, pl. cxxv, f. 1, 3, 1889.

Potomac formation: Near Brooke, near Potomac Run, Virginia.

Glyptostrobus gracillemus Lx. = *Sequoia gracillima*.

Glyptostrobus grœnlandicus Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 76, pl. xvii, f. 9, xx, f. 9, 10, xxii, f. 12, 1874; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv., p. 9, pl. iii, f. 8, 1885 [1883].

Kootanie: North Branch Old Man River, British Columbia.

Glyptostrobus Unger Heer.* Fl. Tert., Helv., vol. i, p. 52, 1855; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 70, 1889 [1890]; Lx., Cret. and Tert. Fl., p. 139, pl. xxii, f. 1-6a, 1883. [*This is probably the same as that referred above to *G. europæus Unger*. It is left in this unsatisfactory manner until the subject can be thoroughly revised with abundant material at hand for determining the exact status. F. H. K.]

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene?: Mackenzie River.

Glyptostrobus Unger Heer = *G. europæus Unger*?

Glyptostrobus sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

Glyptostrobus sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 79, f. (in text) 7, 1890.

Miocene?: Similkameen River and Stump Lake, British Columbia.

Goniopteris polypodioides Ett. = *Dryopteris polypodioides*.

Goniopteris pulchella? Heer.* Lesquereux, Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]. [*Not afterwards referred to by Lesquereux; included in some other species, but no record remains of transfer.]

Laramie group?: Golden, Colorado.

GREWIA Linnæus. Syst., ed. i, 1735.

Grewia auriculata Lx. Cret. and Tert. Fl., p. 252, pl. lv, f. 1, 1883.

Miocene: Bridge Creek, Oregon.

? **Grewia celastroides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 86, pl. xxxix, f. 2, 1887.

Fort Union group: Iron Bluff, Montana.

Grewia crenata (Ung.) Heer. Fl. Tert. Helv., vol. iii, p. 42, pl. cix, f. 12-21; ex, f. 1-11, 1859; Ward, Bull. U. S. Geol. Surv., no. 37, p. 85, pl. xxxix, f. 1, 1887.

Dombeyopsis crenata Ung. Gen. et Sp. Pl. Foss., p. 448, 1850.

Fort Union group?: Bull Mountains, Montana.

Bull. 152—8

Grewia obovata Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 86, pl. xix, f. 15, 15b, 1876; Ward, Bull. U. S. Geol. Surv., no. 37, p. 88, pl. xxxix, f. 6, 7, 1887.

Fort Union group: Seven-Mile Creek, Montana.

? **Grewia Pealei** Ward. Bull. U. S. Geol. Surv., no. 37, p. 87, pl. xxxix, f. 3-5, 1887.

Fort Union group?: Bull. Mountains, Montana.

GREWIOPSIS Saporta. Études, ii, p. 45, 1866.

Grewiopsis acuminata Lx. Proc. U. S. Nat. Mus., vol. x, p. 44, pl. iii, f. 12, 13; iv, f. 1, 2, 1887.

Laramie group?: Unknown.

Grewiopsis æquidentata L. Fl. Dak. Gr., p. 180, pl. lviii, f. 4, 1892.
Dakota group: Kansas.

Gre(v)wiopsis Cleburni Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 380, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 306, 1874 [1876]; Tert. Fl., p. 259, pl. lxii, f. 12, 1878.

Laramie group: Hodges Pass, Wyoming.

Montana formation: Point of Rocks.

Grewiopsis eocenica (Lx.) n. comb.

Grewiopsis Saportanea Lx. Tert. Fl., p. 257, pl. i, f. 10-12, 1878.

Aleurites eocenica Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873].

Laramie group: Black Buttes, Wyoming.

Grewiopsis ficifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 92, pl. xli, f. 1, 2, 1887.

Laramie group, Black Buttes, Wyoming.

Grewiopsis flabellata (Lx.) n. comb.

Populites flabellata Lx. Am. Journ. Sci., vol. xlv, p. 94, 1868.

Populites fagifolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 422, 1872 [1873].

Greviopsis Haydenii Lx. Cret. Fl., p. 97, pl. iii, f. 2, 4; pl. xxiv, f. 3, 1874.

Dakota group: Fort Harker, Kansas.

Greviopsis Haydenii Lx. = Grewiopsis flabellata.

Grewiopsis Mudgei Lx. Fl. Dak. Gr., p. 181, pl. lxvi, f. 3, 1892.

Dakota group: Kansas.

Grewiopsis paliurifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 92, pl. xli, f. 3, 1887.

Laramie group: Black Buttes, Wyoming.

Grewiopsis platanifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 89, pl. xl, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Grewiopsis populifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 90, pl. xl, f. 3-5, 1887.

Fort Union group: Burns's Rancho, Montana.

Grewiopsis Saportanea Lx. = Grewiopsis eocenica.

Grewiopsis tenuifolia Lx. Tert. Fl., p. 258, pl. xl, f. 14, 1878.

Denver group: Golden, Colorado.

Grewiopsis viburnifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 89, pl. xl, f. 2, 1887; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 59, pl. 174, f. 8, 1894.

Fort Union group: Burns's Rancho, Montana.

Cretaceous: Lloyds Neck, Long Island.

Grewiopsis Walcottii Lx. Proc. U. S. Nat. Mus., vol. x, p. 45, pl. iv, f. 3, 4, 1887.

——: Upper Kanab Valley, Utah.

GYMNOGRAMMA Desv. Berl. Mag. V., p. 304, 1811.

Gymnogramma Gardneri Lx. Tert. Fl., p. 58, pl. iv, f. 2, 1878.

Pteris Gardneri Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874].

Laramie group?: Sand Creek, Colorado.

Gymnogramma Haydenii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 59, pl. v, f. 1-3, 1878.

Laramie group?: Yellowstone National Park, Wyoming.

Gymnospermous fruits Font. Potomac Fl., p. 262, 1889.

HALYMENTITES Sternberg. Versuch., vol. ii, Fasc. v and vi, p. 29, 1833.

Halymenites major Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 38, pl. i, f. 7, 8, 1878.

Halymenites minor F. O. Ann. Rept., op. cit., p. 373, 1872 [1873]; Tert. Fl., p. 39, pl. i, f. 9, 1878.

Widely distributed from the Montana formation to the Eocene.

Halymenite minor F. O. Lx. = *Halymenites major* Lx.

Halymenites striatus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 37, pl. i, f. 6, 1878.

Laramie group: Raton Mountains, New Mexico.

HAMAMELITES Saporta. Études, II: Ann. d. Sci. Nat., 5th ser., Bot., vol. iii, p. 47 [43], 1865.

Hamamelites? cordatus Lx. Cret. and Tert. Fl., p. 71, pl. iv, f. 3, 1883.

Dakota group: Fort Harker, Kansas.

Hamamelites fothergilloides Sap. Études, II: Ann. Sci. Nat., Bot., 5th ser., vol. iii, p. 47, 1865; Ward, Bull. U. S. Geol. Surv., no. 37, p. 64, pl. xxix, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Hamamelites kansaseana Lx. = *Quercus kanseana*.

Hamamelites quadrangularis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, 1874 [1876]; Cret. and Tert., Fl., p. 70, 1883.

Alnites quadrangularis Lx. Cret. Fl., p. 62, pl. iv, f. 1, 1874.

Populites quadrangularis Lx. Am. Journ. Sci., vol. xlv, p. 94, 1868.

Dakota group: Kansas?

Hamamelites quercifolius Lx. Cret. and Tert. Fl., p. 71, 1883.

Dakota group: Kansas.

Hamamelites tenuinervis Lx. Cret. and Tert. Fl., p. 70, 1883.

Dakota group: Kansas.

HAUSMANNIA F. Mueller. Fragm. Phyt. Austral., vol. iv, p. 148, 1864.

Hausmannia rigida Newby. Fl. Amboy Clays, p. 35, pl. i, f. 2, 3, 5, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

HEDERA Tournefort ex. Linnæus. Gen., ed. i, p. 56, 1737.

Hedera aquamara Ward = *Quercus aquamara*.

Hedera auriculata Heer. Fl. Foss. Alask., p. 36, pl. ix, f. 6, 1869.

Eocene?: Port Graham, Alaska.

Hedera Bruneri Ward. Bull. U. S. Geol. Surv., no. 37, p. 58, pl. xxvi, f. 6, 1887.

Laramie group: Black Buttes, Wyoming.

Hedera cretacea Lx. Fl. Dak. Gr., p. 127, pl. xviii, f. 1, 1892.

Dakota group: Kansas.

Hedera decurrens Lx. Fl. Dak. Gr., p. 130, pl. xviii, f. 6, 1892.

Dakota group: Kansas.

Hedera MacClurii Heer. Fl. Foss. Arct., vol. i, p. 119 pl. xvii, f. 1a, 2a, 3, 4, 5a; p. 138; pl. xxi, f. 17a, 1868.

Miocene?: Mackenzie River.

Hedera marginata Lx. Cret. and Tert. Fl., p. 177, pl. xl, f. 8, 1883.

Green River group: Florissant, Colorado.

Hedera microphylla Lx. Fl. Dak. Gr., p. 127, pl. xviii, f. 2, 3, 1892.

Dakota group: Kansas.

Hedera minima Ward. Bull. U. S. Geol. Surv., no. 37, p. 57, pl. xxvi, f. 5, 1887.

Fort Union group: Clear Creek, Montana.

Hedera obliqua Newby. Fl. Amboy Clays, p. 113, pl. xxxvii, f. 8; xxxviii, f. 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Hedera orbiculata (Heer) Lx. Fl. Dak. Gr., p. 129, pl. xvii, f. 12-14, 1892.

Chondrophyllum orbiculatum Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 115, pl. xxxi, f. 3c, 1874.

Dakota group: Kansas.

Hedera ovalis Lx. Cret. Fl., p. 91, pl. xxv, f. 3; pl. xxvi, f. 4, 1874.

Chondrophyllum Nordenskiöldi? Heer. In Lx., Fl. Dak. Gr., p. 129.

Dakota group: Nebraska and Kansas.

Mill Creek series: Mill Creek.

Hedera parvula Ward. Bull. U. S. Geol. Surv., no. 37, p. 57, pl. xxvi, f. 4, 1887.

Fort Union group: Clear Creek, Montana.

Hedera platanoidea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 351, pl. iii, f. 3, 1874 [1876]; Fl. Dak. Gr., p. 128, 1892.

Dakota group: Fort Harker, Kansas.

Hedera primordialis Sap. Le Monde des Pl., p. 200, f. 29, 1879; Newby., Fl. Amboy Clays, p. 113, pl. xix, f. 1, 9; xxxvii, f. 1-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Hedera Schimper Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 395, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 351, pl. vii, f. 5, 1874 [1876]; Cret. and Tert. Fl., p. 65, pl. iv, f. 7, 1883.

Dakota group: Fort Harker, Kansas.

HEDERÆPHYLLUM Fontaine. Potomac Fl., p. 323, 1889.

Hederæphyllum angulatum Font. Potomac Fl., p. 324, pl. clxii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

Hederæphyllum crenulatum Font. Potomac Fl., p. 324, pl. clxii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

Hemitelites Torelli Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 462, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 5, 1871 [1872]. [This specimen was not afterwards referred to by Lesquereux.]

Eocene?: Green River, Wyoming.

Hemitelites Torelli Heer = *Osmunda Doroschkiana*.

HICORIA Rafinesque. Med. Rep. (II), vol. 5, p. 352, 1808.

Hicoria antiquorum (Newby.) n. comb.

Carya antiquorum Newby. Later Extinct Floras, p. 72, 1868; Lx., Tert. Fl., p. 289, pl. lvii, f. 1-5; pl. lviii, f. 2, 1878.

Fort Union group: Yellowstone Valley, Montana.

Denver group?: Carbon and Evanston, Wyoming; ? Cross Lake, Louisiana.

Upper Laramie group?: Porcupine Creek and Rocky Mountain House, Northwest Territory.

Hicoria Bruckmanni (Heer) n. comb.

Carya Bruckmanni? Heer. Fl. Tert. Helv., vol. iii, p. 93, pl. cxxvii, f. 52, 1859; Lx., Cret. and Tert. Fl., p. 191, pl. xxxix, f. 6, 1883.

Green River group: Florissant, Colorado.

Hicoria elænoides (Ung.) n. comb.

Carya elænoides (Ung.) Heer. Fl. Tert. Helv., vol. iii, p. 92, pl. cxxxi, f. 1-4, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 18, 1888.

Miocene: John Day Valley, Oregon.

Hicoria juglandiformis (Sternb.) n. comb.

Carya bilinea (Ung.) Ett. Abhandl. k. k. geol. Reichs., vol. i, p. 12, pl. ii, f. 17, 1852; Lesquereux, Cret. and Tert. Fl., p. 191, pl. xxxix, f. 1, 2, 13, 1883.

Juglans bilinea Ung. Gen. et Sp. Pl. Foss., p. 469, 1850.

Phyllites *juglandiformis* Sternb. Vers. 4. Index, Ic., pl. xxxv, f. 1, 1825.

Green River group: Florissant, Colorado.

Miocene: Spanish Peak and Shasta County, California.

Hicoria pecan (Marsh) Britton. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Carya olivæformis Nutt. Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Miocene?: Bridgeton, New Jersey.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

Hicoria rostrata (Göpp.) n. comb.

Carya rostrata (Göpp.) Schimp. Pal. Vég., vol. iii, p. 257, 1874; Lx., Cret. and Tert. Fl., p. 191, pl. xxxix, f. 4, 1883.

Juglans rostrata Göpp. Palæontogr., vol. viii, p. 136, pl. lv, 1861.

Green River group: Florissant, Colorado.

Hicoria vermontana (Lx.) n. comb.

Carya vermontana Lx. Am. Journ. Sci., vol. xxxv, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 130, 1861.

——: Brandon, Vermont.

Hicoria verrucosa (Lx.) n. comb.

Carya verrucosa Lx. Am. Journ. Sci., vol. xxxii, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 129, 1861.

——: Brandon, Vermont.

Hicoria (Dn. sp.).

Carya sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Fort Pierre series: Head of Swift Current.

HYMENÆA Linnæus. Gen. Pl., p. 366, 1737.

Hymenæa dakotana Lx. Fl. Dak. Gr., p. 145, pl. lv, f. 2, 3; pl. lvi, f. 1, 2; pl. lxii, f. 2, 1892.

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Sea Cliff, ? Long Island.

Hymenæa virginensis Font. Potomac Fl., p. 320, pl. clxiii, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

HYMENOPHYLLUM Smith. In Römer, Arch. I, 2, p. 56, 1797.

Hymenophyllum confusum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874]; Tert. Fl., p. 51, pl. ii, f. 6-6a, 1878.

Denver group: Golden, Colorado.

Hymenophyllum cretaceum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 421, 1872 [1873].

Dakota group: Fort Harker, Kansas.

HYPNUM Linnæus. Gen. Pl., p. 323, 1737.

Hypnum columbianum Penhallow. In Dn., Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, f. 3, 1890.

Miocene?: Quensel, Similkameen Valley, British Columbia.

Hypnum commutatum Hedw. Hinde, Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

Hypnum fluitans L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 71, 1896.

Pleistocene: Besserer's wharf, Ottawa River.

Hypnum Haydenii Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 44, pl. v, f. 14-14b, 1878.

Green River group: South Park, Colorado.

Hypnum recurvans Schw. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 71, 1896.

Pleistocene: Long Portage, Missinaibi River, Ontario.

Hypnum revolvans Swartz. Hinde, Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

Hypnum sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

ILEX (Tournefort) Linnaeus. Syst., ed. i, 1735.

Ilex? affinis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872]; Tert. Fl., p. 270, pl. l, f. 2, 3, 1878.

Green River group: Green River Station, Wyoming.

Ilex armata Lx. Fl. Dak. Gr., p. 176, pl. xxix, f. 8, 1892.

Dakota group: Kansas.

Ilex borealis Heer. Fl. Foss. Arct., vol. vii, p. 39, pl. lxiv, f. 3, 4, 1883; Lx., Fl. Dak. Gr., p. 176, pl. xxxv, f. 8, 1892.

Dakota group: Kansas.

Ilex Cassine L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Ilex dakotensis Lx. Fl. Dak. Gr., p. 178, pl. xxix, f. 11, 1892.

Dakota group: Kansas.

Ilex dissimilis Lx. Tert. Fl., p. 271, pl. l, f. 7-9, 1878.

Quercus ilicoides? Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 291, 1871 [1872].

Green River group?: Sage Creek, Montana.

Ilex? elongata Newby. Fl. Amboy Clays, p. 98, pl. xviii, f. 1, 5, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Ilex grandifolia Lx. Cret. and Tert. Fl., p. 187, pl. xxxviii, f. 1, 1883.

Green River group: Florissant, Colorado.

Ilex insignis Heer. Fl. Foss. Alask., p. 37, pl. x, f. 1, 1869.

Eocene?: Port Graham, Alaska.

Ilex integrifolia (Hill) Chapm.

Prinos integrifolia Ell. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

Ilex Knightiaefolia Lx. Cret. and Tert. Fl., p. 188, pl. xl, f. 4, 5, 1883.

Green River group: Florissant, Colorado.

Ilex? longifolia Heer. In Sismonda, Prod. Fl. Tert. Piémont, Mem. Acad. Sci. Turin, sec. ii, vol. xviii, p. — [reprint 29], pl. iii, f. 8, 1859;

Lx., Proc. U. S. Nat. Mus., vol. xi, p. 21, 1888.

Eocene: Cherry Creek, Oregon.

Ilex maculata Lx. Cret. and Tert. Fl., p. 186, pl. xlv, f. 5, 1883.

Green River group: Alkali Station, Wyoming.

Ilex Masoni Lx. Fl. Dak. Gr., p. 179, pl. vii, f. 6; lxiii f. 6, 1892.

Dakota group: Kansas.

Ilex microphylla Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Fort Union group: Fort Union, Dakota.

Ilex microphylla Lx. Cret. and Tert. Fl., p. 186, 1883.

Green River group: Florissant, Colorado.

Ilex opaca Ait. Hollick, Bull. Torr. Bot. Club, xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Ilex? ovata Newby. Fl. Amboy Clays, p. 98, pl. xviii, f. 2, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Ilex papillosa Lx. Fl. Dak. Gr., p. 177, pl. xxix, f. 9, 10; pl. lviii, f. 3, 1892.

Dakota group: Kansas.

Ilex prunifolia Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 27, pl. ix, f. 7, 1878.

Miocene: Table Mountain, California.

Ilex pseudo-stenophylla Lx. Cret. and Tert. Fl., p. 185, 1883.

Ilex stenophylla Ung. Chlor. Prot., p. 149, pl. 1, f. 10-13, 1847; Lx., Ann.

Rept. U. S. Geol. and Geogr. Surv. Terr., suppl., p. 8, 1871 [1872].

Green River group: Florissant, Colorado.

Ilex quercifolia Lx. Cret. and Tert. Fl., p. 186, pl. xxxviii, f. 2-5, 1883.

Green River group: Florissant, Colorado.

Ilex Scudderi Lx. Fl. Dak. Gr., p. 178, pl. lviii, f. 2, 1892.

Dakota group: Kansas.

Ilex sphenophylla? Heer. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]. [Apparently not afterwards mentioned.]

Green River group?: Florissant, Colorado.

Ilex stenophylla Ung. Lesquereux=*Ilex pseudo-stenophylla*.

Ilex strangulata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 399, 1875 [1896]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 359, pl. viii, f. 3, 1874 [1876]; Cret. and Tert. Fl., p. 84, pl. iii, f. 7, 1883.

Dakota group?: Southwestern Colorado.

Ilex subdenticulata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874]; Tert. Fl., p. 271, pl. 1, f. 5, 6, 6a, 6b, 1878.

Green River group: Florissant, Colorado.

Ilex undulata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874].

———?: Unknown.

Ilex wyomingiana Lx. Tert. Fl., p. 270, pl. 1, f. 1, 1878.

Green River group: Green River Station, Wyoming.

ILLICICIUM L. Syst., ed. x, p. 1050, 1759.

Illicium lignitum Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 149, 1861.

———: Brandon Vermont.

INGA Scopoli. Introd., 298, 1777.

Inga cretacea Lx. Fl. Dak. Gr., p. 153, pl. lv, f. 11, 1892.

Dakota group: Kansas.

INOLEPIS Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 72, 1874.

Inolepis? sp., Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 337, pl. iv, f. 8, 1874 [1876].

Dakota group: Kansas.

ISCETES Linnæus. Amœn. Acad., iii, 1751.

Iscetes brevifolius Lx. Cret. and Tert. Fl., p. 136, 1883.

Green River group: Florissant, Colorado.

IOXYLON Rafinesque. Am. Mo. Mag., vol. iv, p. 195, 1818.

Ioxylon pomiferum Raf. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Maclura aurantiaca Nutt. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, p. 69, 1896.

Miocene?: Bridgeton, New Jersey.

Pleistocene: Don Valley, Toronto.

JUGLANDIPHYLLUM Fontaine. Potomac Fl., p. 315, 1889.

Juglandiphyllum integrifolium Font. Potomac Fl., p. 315, pl. clvii, f. 3, 5, 6, 1889.

Potomac formation: Deep Bottom, White House Bluff, Virginia.

JUGLANDITES Sternberg. Vers., vol. i, p. xl, 1825.

Juglandites cretacea Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River, Canada.

Juglandites ellsworthianus Lx. Fl. Dak. Gr., p. 70, pl. xxxvii, f. i, 1892.

Dakota group: Kansas.

Juglandites fallax Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 59, pl. xi, f. 48, 1893 [1894].

Upper Cretaceous: Vancouver Colliery, Vancouver Island.

Juglandites Lacoiei Lx. Fl. Dak. Gr., p. 71, pl. xlviii, f. 5, 1892.

Dakota group: Kansas.

Juglandites primordialis Lx. Fl. Dak. Gr., p. 70, pl. xxxv, f. 15, 1892.

Dakota group: Kansas.

Juglandites sinuatus Lx. Fl. Dak. Gr., p. 71, pl. xxxv, f. 9-11, 1892.

Dakota group: Kansas.

Juglandites? sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 59, pl. x, f. 43; pl. xiii, f. 56, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

JUGLANS Linnæus. Gen., ed. i, p. 291, 1737.

Juglans acuminata Al. Br. Neues Jahrb. 1845, p. 170, 1845.

Eocene?: Port Graham, Alaska.

Juglans alkalina Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 288, pl. lxii, f. 6-9, 1878.

Green River group?: Alkali Station, Wyoming.

Juglans appressa Lx. Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xx, f. 6, 1869; Ann. Rept., op. cit., p. 294, 1871 [1872].

Eolignitic: Mississippi.

Juglans arctica Heer. Fl. Foss. Arct., vol. 6, abt. ii, p. 71, pl. xl, f. 2, 1882; in Lx., Fl. Dak. Gr., p. 68, pl. xix, f. 3; pl. xxxix, f. 5, 1892.

Amboy clay: Woodbridge, New Jersey?

Dakota group: Kansas.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Mass.

Juglans baltica? Heer. Mioc. Balt. Fl., p. 98, pl. xxix, f. 8-12, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——: Black Buttes, Wyoming.

Juglans bilinica Ung., 1850=Hicoria juglandiformis.

Juglans californica Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 34, pl. ix, f. 14; pl. x, f. 2, 3, 1878.

Miocene: Chalk Bluffs, California.

Juglans cinerea? Du. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

——: Porcupine Creek, Canada.

Juglans costata (Presl.) Brongn. Tableau d. Genres Vég. Foss., p. 168 [119], 1849; Lx., Cret. and Tert. Fl., p. 190, pl. xxxix, f. 5, 1883.

Juglandites costatus Presl. In Sternberg, Versuch, vol. ii, p. 207, 1833.

Juglans acuminata? Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872].

Green River group: Florissant, Colorado.

Juglans crassipes Heer. Neue Denkschr. Schw. Gesel., vol. xxiii, mem. 2, p. 23, pl. vi, f. 3, 1869; Lx., Fl. Dak. Gr., p. 69, pl. xlix, f. 1-3; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 51, pl. 175, f. 3, 1894.

Dakota group: Kansas.

Cretaceous: Brooklyn, New York.

Juglans Crossii nom. nov.

Juglans denticulata Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 483, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]; Tert.

Fl., p. 289, pl. lviii, f. 1, 1878. [J. denticulata Heer, 1869, preoccupied by J. denticulata O. Web., 1852].

Green River group: Green River, Wyoming.

Livingston beds: Bozeman coal field, Montana.

Denver group?: Carbon, Wyoming.

- Juglans Debeyana** (Heer) Lx. Am. Journ. Sci., vol. xlv, p. 101, 1868.
Populus? Debeyana Heer. Phyll. Crét. d. Nebr., p. 14, pl. i, f. 1, 1866.
Dakota group: Decatur, Nebr.; New Ulm, Minnesota.
- Juglans dentata** Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].
Eocene: Green River, Wyoming.
- Juglans denticulata** Heer = **Juglans Crossii**.
- Juglans egregia** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 36, pl. ix, f. 12; pl. x, f. 1, 1878.
Miocene: Chalk Bluffs, California.
- Juglans florissanti** Lx. Cret. and Tert. Fl., p. 190, 1883.
Green River group: Florissant, Colorado.
- Juglans harwoodensis** Dn. Trans. Roy. Soc., Canada, vol. i, sec. iv, p. 28, pl. viii, f. 31, 1882 [1883].
Upper Cretaceous: Nanaimo, Vancouver Island.
- Juglans hesperia** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 723, pl. xcix, f. 8, 1898.
Payette formation: Marsh, Idaho.
- Juglans laurinea** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 35, pl. ix, f. 11, 1878.
Miocene: Chalk Bluffs, California.
- Juglans Leconteana** Lx. Tert. Fl., p. 285, pl. liv, f. 10-13, 1878.
Denver group?: Evanston, Wyoming.
Laramie group: Marshall, Colorado.
Eocene?: Cherry Creek, Oregon.
- Juglans nigella** Heer. Fl. Foss. Alask., p. 38, pl. ix, f. 2-4, 1869; Lx., Cret. and Tert. Fl., p. 235, pl. xlvia, f. 11, 1883.
Eocene?: Port Graham, Alaska.
Fort Union group: Montana; Bad Lands, Dakota.
- Juglans nigella** Heer, Dn. Rept. 49th Parallel = **Juglans rugosa**.
- Juglans obtusifolia** Heer. Fl. Tert. Helv., vol. iii, p. 89, pl. cxxix, f. 9, 1859; Lx., Ahn. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 12, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]
Laramie group?: Evanston, Wyoming.
- Juglans occidentalis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].
Eocene: Green River, Wyoming.
- Juglans oregoniana** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 35, pl. ix, f. 10, 1878.
Miocene: Chalk Bluffs, California.
- Juglans picroides** Heer. Fl. Foss. Alask., p. 39, pl. ix, f. 5, 1869.
Eocene?: Port Graham, Alaska.

Juglans rhamnoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 294, 1871 [1872]; Tert. Fl., p. 284, pl. liv, f. 6-9, 1878.

Rhamnus Rossmüssleri Ung. Lx., Ann. Rept., op. cit., p. 314, 1874 [1876].

Livingston beds: Bozeman coal field, Montana.

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Fort Union group: Bad Lands, Dakota; Porcupine Creek, British Columbia.

Eocene?: Cherry Creek, Oregon.

Juglans rostrata Göpp. = *Hicoria rostrata*.

Juglans rugosa Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1868; Tert. Fl., p. 286, pl. liv, f. 5, 4; pl. lv, f. 1-9; pl. lvi, f. 1, 2, 1878.

Nyssa lanceolata Lx. Tert. Fl., p. 245, pl. xxxv, f. 5 [non f. 6], 1878.

Juglans nigella Heer, Dn. Rept. 49th Parallel.

Denver group: Bozeman coal field, Montana; Golden, Colorado.

Canadian upper Laramie: Great Valley.

Laramie group: Evanston, Wyoming? Black Buttes, Wyoming.

Eolignitic: Wickliffe, Kentucky.

Eocene?: Cherry Creek, Oregon; Lassen County, California.

Juglans Saffordiana Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xx, f. 7, 1869.

Eolignitic: Lagrange, Tennessee.

Juglans Schimperi Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872]; Tert. Fl., p. 287, pl. lvi, f. 5-10, 1878

Green River group: Green River, Wyoming.

Denver group: Golden, Colorado.

Canadian upper Laramie: Great Valley.?

Juglans Smithsoniana Lx. = *Ficus Smithsoniana*.

Juglans thermalis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 17, 1871 [1872]; Tert. Fl., p. 287, pl. lvi, f. 3, 4, 1878.

Denver beds: Golden, and Hot Springs, Middle Park, Colorado.

Juglans Townsendi Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 222, pl. ix, f. 5, 1894.

Eocene?: Herendeen Bay, Alaska.

Juglans Unger Heer. Tert. Fl. Helv., vol. iii, p. 199, pl. clv, f. 18, 1859; Ward, Bull. U. S. Geol. Surv. No. 37, p. 33, pl. xiv, f. 6, 1887.

Fort Union group?: Burns's Ranch, Montana.

Juglans vetusta Heer. Fl. Tert. Helv., vol. iii, p. 90, pl. cxxvii, f. 40-44, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 22, 1888.

Eocene?: Cherry Creek, Oregon.

Juglans Woodiana Heer. Neue Denkschr., vol. xxi, p. 9, pl. ii, f. 4-7, 1865; Lx., Cret. and Tert. Fl., p. 236, 1883.

Eocene?: Burrard Inlet, British Columbia; Chignik Bay, Alaska.

Fort Union group: Bad Lands, Dakota.

Juglans sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Fossil wood.]

Canadian upper Laramie: Souris River.

Juglans sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

Juglans sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

JUNCUS (Tournefort.) Linnæus. Syst., ed. i, 1735.

Juncus sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 5, 1871 [1872].

Green River group: Green River, Wyoming.

JUNIPERUS (Tournefort.) Linnæus. Syst., ed. i, 1735.

Juniperus hypnoides Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, pl. xlv, f. 3; xlv, f. 18, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 29, pl. i, f. 1, 1892.

Cretaceous: Kreischerville, Staten Island; Marthas Vineyard, Mass.

Juniperus macilenta Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, pl. xxv, f. 10, 10b, 11, 1882; Newby., Fl. Amboy Clays, p. 54, pl. x, f. 7, 1895 [1896].

Dammara microlepis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, 1882.

Amboy clay: Woodbridge, New Jersey.

KALMIA Linnæus. Diss. Chen., p. 18, 1750.

Kalmia Brittoniana Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 34, pl. ii, f. 6-8, 1892.

Cretaceous: Staten Island.

LARICOPSIS Fontaine. Potomac Fl., p. 232, 1889.

Laricopsis angustifolia Fontaine. Potomac Fl., p. 233, pl. cii, f. 9, 10; ciii, f. 1, 4, 1889.

Potomac formation: Near Dutch Gap Canal and Trents Reach, Virginia.

Laricopsis brevifolia Font. Potomac Fl., p. 234, pl. cii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal and Trents Reach, Virginia.

Laricopsis longifolia Font. Potomac Fl., p. 233, pl. cii, f. 7, 8; ciii, f. 2, 3; clxv, f. 4; clxviii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Trinity division: Glenrose, Texas.

LARIX Adanson. Fam. Pl., vol. 2, p. 480, 1763.

Larix americana Mx. = *Larix laricina*.

Larix churchbridgensis Penhallow. Am. Geol., vol. ix, p. 370, 1892.

Interglacial: Churchbridge, Manitoba.

Larix laricina (Du Roy) Koch.

Larix americana Mx. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890;

Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 60, 1896.

Pleistocene: Moose River, Montreal; Fort Madison, Iowa; New Brunswick; Scarboro Heights, Ontario.

LASTREA Presl. Pterid, p. 73, 1836.

Lastrea (Goniopteris) Fischeri Heer. Fl. Tert. Helv., vol. i, p. 34, pl. ix, f. 3, 1855; Lx., Cret. and Tert. Fl., p. 239, pl. i, f. 1, 1a, 1883.

Miocene: John Day Valley, Oregon.

Lastrea (Goniopteris) goldiana Lx. Tert. Fl., p. 56, pl. iv, f. 13, 1878.

Aspidium goldianum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874].

Denver beds: Golden, Colorado.

Lastrea (Goniopteris) intermedia Lx. Tert. Fl., p. 56, pl. iv, f. 14, 1878.

Aspidium (Lastrea) pulchellum Heer. In Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1872].

Aspidium (Lastrea) Fischeri Heer. In Lx., loc. cit., p. 384, 1870 [1872].

Denver beds?: Golden, Colorado.

Lastrea (Goniopteris) Knightiana Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Curren Creek, Oregon.

Lastrea (Goniopteris) polypodioides? Ett. = *Dryopteris (Goniopteris) polypodioides*.

Lastrea styrica Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 418, 1873 [1874]. [Not afterwards mentioned by Lesquereux.]

——?: Blakes Fork, Uinta Mountains.

Lathraea arguta Lx. = *Dryopteris arguta*.

LAURELIA Jussieu. In Ann. Mus. Par., vol. xiv, p. 134, 1809.

Laurelia primæva Lx. Fl. Dak. Gr., p. 108, pl. xx, f. 8, 1892.

Dakota group: Kansas.

LAURINOXYLON Felix. Die Holzopale Ungarns: Jahrb. d. k. Geol. Anstalt, vol. vii, p. 27, 1884.

Laurinoxylon aromaticum Felix = *Perseoxylon aromaticum*.

Laurinoxylon Branneri Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 256, pl. ix, f. 8, 9; x, f. 1, 2; xi, f. 4, 1889.

Tertiary [Orange Sand]: Bolivar Creek, Poinsett County, and Big and Little Crow Creeks, St. Francis County, Arkansas.

Laurinoxylon Lesquereuxiana Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 258, pl. x, f. 3, 4; xi, f. 3, 4, 1889.

Tertiary: Near Wittsburg, Cross County, Arkansas.

Laurinoxylon? sp., Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 259, 1889.

Tertiary [Orange Sand]: Red Bluff, Jefferson County, Arkansas.

LAUROPHYLLUM Göppert. Neues Jahrb. 1853, p. 434, as nomen nudum: Die Tertiärf. Java., p. 45, 1854.

Laurophyllum angustifolium Newby. Fl. Amboy Clays, p. 86, pl. xvii, f. 10, 11, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Laurophyllum debile Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. ii, f. 7, 7a, 1882 [1883].

Mill Creek series: Forks of Peace River, Northwest Territory;
North Fork Old Man River.

Laurophyllum ellsworthianum Lx. = *Quercus ellsworthianus*.

Laurophyllum insigne Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. vii, f. 24, 25, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Laurophyllum lanceolatum Newby. Fl. Amboy Clays, p. 87, pl. xvii, f. 1, 12, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Laurophyllum minus Newby. Fl. Amboy Clays, p. 86, pl. xvi, f. 7-9, 1895 [1896].

Amboy clay: New Jersey.

Laurophyllum reticulatum Lx. = *Ficus reticulata*.

LAURUS L. Gen., ed. i, p. 120, 1737.

Laurus acuminata Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Fort Union group: Valley of the Yellowstone, Yellowstone.

Laurus angusta Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 76, pl. xx, f. 1b, 7; pl. xliii, f. 1c, 1882; Lx., Fl. Dak. Gr., p. 93, pl. xvi, f. 7, 1892.

Dakota group: Kansas.

Laurus antedecens Lx. Fl. Dak. Gr., p. 92, pl. xi, f. 3, 1892.

Dakota group: Kansas.

Laurus Brossiana Lx. = *Persea Brossiana*.

Laurus californica Lx. Cret. and Tert. Fl., p. 252, pl. lvii, f. 3; lviii, f. 6-8, 1883; Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 1, 1888.

Miocene: Corral Hollow, California; Boaz, Graves County, Kentucky.

Laurus carolinensis Michx. = *Persea Borbonia*.

Laurus crassinervis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, 1882 [1883].

Cretaceous: Susqua River, Northwest Territory.

Intermediate series (Cretaceous): North Fork Old Man River, British Columbia.

Mill Creek series (Cretaceous): Mill Creek.

Laurus Colombi Heer. Neue Denkschr., vol. xxi, p. 7, pl. i, f. 6, 1865.

—?: Nanaimo; Vancouver Island.

Laurus Fürstenbergii Al. Br. In Unger, Gen. et Sp. Pl. Foss., p. 423, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 26, 1888.

Miocene?: Corral Hollow, California.

Laurus grandis Lx. Cret. and Tert. Fl., p. 251, pl. lviii, f. 1, 3, 1883.

Miocene: Corral Hollow, California.

Laurus Hollæ Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 76, pl. xxxiii, f. 13; pl. xlv, f. 5b; xlv, f. 3, 1882; Lx., Fl. Dak. Gr., p. 92, pl. xii, f. 8, 1892.

Dakota group: Kansas; Staten Island?

Laurus Knowltoni Lx. Fl. Dak. Gr., p. 94, pl. i, f. 4, 1892.

Dakota group: Kansas.

Laurus labrusca Ung. = *Sterculia labrusca*.

Laurus macrocarpus Lx. Am. Journ. Sci., vol. xvi, p. 98, 1868; Cret. Fl., p. 74, pl. x, f. 2, 1874; Fl. Dak. Gr., p. 95, 1892.

Dakota group: Decatur, Nebraska.

Laurus (Carpites) microcarpa Lx. Fl. Dak. Gr., p. 93, pl. xvi, f. 8, 1892.

Dakota group: Kansas.

Laurus modesta Lx. Cret. and Tert. Fl., p. 53, pl. xvi, f. 4, 1883.

Dakota group: Morrison, Colorado.

Laurus nebrascensis Lx. Am. Journ. Sci., vol. xvi, p. 98, 1868; Cret. Fl., p. 74, pl. x, f. 1; xxviii, f. 14, 1874.

Persea nebrascensis Lx. Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 9, 10, 1869.

Dakota group: Decatur, Nebraska; Kansas; New Ulm, Minnesota.

Amboy clay?: Sayreville, New Jersey?

Laurus Newberryana Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 179, f. 5, 1892; Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard, Massachusetts.

Laurus obovata Web. Palæontogr., vol. ii, p. 180, pl. xx, f. 4, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1872 [1873].

[Not afterwards referred to by Lesquereux.]

—— ? : Black Buttes, Wyoming.

Laurus ocoteoides Lx., 1878 = *Laurus Wardiana*.

Laurus Omalii Sap. and Mar. Essai Vég. d. Marnes Heers., d. Gelin-den, Mem. Cour. Acad. Belg., vol. xxxvii, 1873, p. 49, pl. vi, f. 1, 1874; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 176, f. 3, 6, 1894.

Cretaceous: Sea Cliff and Glen Cove, Long Island.

Laurus pedatus Lx. Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xix, f. 1, 1869.

Eolignitic: Mississippi.

Laurus plutonia Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 75, pl. xix, f. 1d, 2-4, etc., 1882; Lx., Fl. Dak. Gr., p. 91, pl. xiii, f. 5, 6; pl. xii, f. 5, 1892.

Amboy clay: New Jersey.

Clay marl: Cliffwood, New Jersey.

Dakota group: Kansas; New Ulm, Minnesota?

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Massachusetts.

Laurus præstans Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 368, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv., p. 305, 1874 [1876]; Tert. Fl., p. 215, pl. lxiii, f. 7, 1878.

Laramie group: Point of Rocks, Wyoming.

Laurus primigenia Ung. Gen. et Sp. Pl. Foss., p. 423, 1850; Heer, Proc. Acad. Nat. Sci. Phila., vol. x, p. 265, 1858; Lx., Ann. Rept., op. cit., p. 406, 1872 [1873]; Tert. Fl., p. 214, pl. xxxvi, f. 5, 6, 8, 1878; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 33, pl. ii, f. 20; iii, f. 3, 1892.

Denver beds: Golden, Colorado.

Denver beds?: Carbon and Evanston, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Cretaceous?: Selma, Texas; Staten Island?

Laurus princeps Heer. Fl. Tert. Helv., vol. ii, p. 77, pl. lxxxix, f. 16, 17; xc, f. 17, 20; xcvii, f. 1, 1856; Lx., Cret. and Tert. Fl., p. 250, pl. lviii, f. 2, 1883.

Miocene: Corral Hollow, California.

Laurus proteæfolia Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 1, 2, 1874 [1876]; Cret. and Tert. Fl., p. 52, pl. iii, f. 9, 10; xvi, f. 6, 1883.

Dakota group: Morrison, Colorado; Fort Harker, Kansas.

Laurus resurgens Sap. Études: Ann. sci. nat. Bot. 5th ser., vol. iv, p. 132, pl. vii, f. 9a, 9b, 1866; Ward, Bull. U. S. Geol. Surv., no. 37, p. 47, pl. xxiii, f. 7, 1887.

Fort Union group?: Bull Mountains, Montana.

Miocene: Corral Hollow, California.

Laurus salicifolia Lx. Cret. and Tert. Fl., p. 251, pl. lviii, f. 4, 5, 1883.

Miocene: Corral Hollow, California.

Laurus Schmidtiana Heer. Fl. Foss. Aret., vol. v, abt. ii, p. 50, pl. xv, f. 8; 1878; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

Laurus sessiliflora Lx. = *Malapœna sessiliflora*.

Laurus socialis Lx. Tert. Fl., p. 213, pl. xxxvi, f. 1, 2, 3, 4, 7, 1878.

Eocene?: Lassen County, California.

Denver beds: Golden, Colorado.

Livingston beds: Bozeman coal field, Montana.

Eolignitic?: Cross Lake, Louisiana.

Laramie group: Evanston and Hodges Pass, Wyoming.

Laurus teliformis Lx. Fl. Dak. Gr., p. 94, pl. i, f. 9, 1892.

Dakota group: Kansas.

Laurus utahensis Lx. Tert. Fl., p. 216, pl. xxvi, f. 11, 1878.

Laramie group: Hodges Pass, Wyoming?; Cross Lake, Louisiana.

Eolignitic: Cross Lake, Louisiana.

Laurus Wardiana nom. nov.

Laurus ocoteoides Lx. Tert. Fl., p. 215, pl. xxxvi, f. 10, 1878. [Not Massalongo, 1858.]

Laramie group: Golden, Colorado.

Laurus sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Sayreville, New Jersey.

Bull. 152—9

Laurus sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Laurus sp. Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

LEGUMINOSITES Bowerbank. Hist. Foss. Fr. and Seeds Lond. Clay, p. 124, 1840.

Leguminosites alternans Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Cret. and Tert. Fl., p. 202, 1883.

Green River group: Mouth White River.

Leguminosites? arachioides Lx. Tert. Fl., p. 301, pl. lix, f. 13, 14, 1878; Dn., Geol. Surv. Canada, Rept. of Prog. for 1877-78, p. 186 b, 1878.

Carpolithes arachioides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1872 [1873].

Fort Union group?: Clear Creek, Montana.

Denver group: Middle Park, Colorado.

Laramie group?: Evanston, Wyoming.

Leguminosites atanensis Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 119, pl. xxxiv, f. 6, 1874; Newby., Fl. Amboy Clays, p. 97, pl. xlii, f. 40, 1895 [1896].

Amboy clay: New Jersey?

Leguminosites? borealis Dn. Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, pl. x, f. 7, 1889.

Miocene?: Mackenzie River.

Leguminosites cassioides Lx., 1878 = **Leguminosites Lesquereuxiana**.

Leguminosites constrictus Lx. Fl. Dak. Gr., p. 151, pl. xlv, f. 3, 1892.

Dakota group: Kansas.

Cretaceous?: Oak Neck, Long Island.

Leguminosites convolutus Lx. Fl. Dak. Gr., p. 151, pl. xlv, f. 4, 1892.

Dakota group: Kansas.

Cretaceous?: Glen Cove, Long Island.

Leguminosites coronilloides? Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 119, pl. xxxiv, f. 14, 1874; Lx., Fl. Dak. Gr., p. 149, pl. xlii, f. 10, 1892.

Dakota group: Kansas.

Amboy clay: New Jersey.

Leguminosites cultriformis Lx. Cret. and Tert. Fl., p. 86, pl. x, f. 4, 1883.

Dakota group: Locality not given.

Leguminosites dakotensis Lx. Fl. Dak. Gr., p. 150, pl. xxxviii, f. 5, 1892.

Dakota group: Kansas.

Leguminosites frigidus Heer. Fl. Foss. Arct., vol. vii, p. 44, pl. lxxv, f. 13; lv, f. 21a, 22, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 34, pl. ii, f. 11, 1892.

Cretaceous: Staten Island.

Leguminosites hymenophyllus Lx. Fl. Dak. Gr., p. 152, pl. lv, f. 7-9; pl. lvi, f. 3, 1892.

Dakota group: Kansas.

Leguminosites insularis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 103, pl. xlv, f. 6, 1882; Lx., Fl. Dak. Gr., p. 152, pl. liv, f. 4, 1892.

Dakota group: Kansas.

Leguminosites Lesquereuxiana nom. nov.

Leguminosites cassioides Lx*. Tert. Fl., p. 300, pl. lix, f. 1-4, 1878. [* *L. cassioides* Lx., 1878, preoccupied by *L. cassioides* Engl., 1870.]

Green River group: Green River Station, Wyoming.

Laramie group: Bozeman coal field, Montana.

Leguminosites Marcouanus Heer=*Liriodendron primævum*.

Leguminosites omphalobioides Lx. Fl. Dak. Gr., p. 149, pl. xxxviii, f. 4, 1892; Newby., Fl. Amboy Clays, p. 97, pl. xlii, f. 39, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

Leguminosites phaseolites? Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 118, pl. xxxiv, f. 7-11, 1874; Lx., Fl. Dak. Gr., p. 153, pl. lv, f. 10, 1892.

Dakota group: Kansas.

Leguminosites pisiformis? Heer. Fl. Tert. Helv., vol. iii, p. 129, pl. cxxxix, f. 37-39, 1889; Lx., Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 716, f. 152, 1861.

——: Brandon, Vermont.

Leguminosites podogonialis Lx. Fl. Dak. Gr., p. 148, pl. xiii, f. 11; pl. xxxviii, f. 16, 1892.

Dakota group: Kansas.

Leguminosites serrulatus Lx. Cret. and Tert. Fl., p. 202, pl. xxxix, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

Leguminosites truncatus Kn. In Lesquereux, Fl. Dak. Gr., p. 150, pl. xxi, f. 7, 1892.

Dakota group: Kansas.

Leguminosites sp., Dn.=*Leguminosites arachioides*.

Leguminosites sp., Heer. Neue Denkschr., vol. xxi, p. 10, pl. ii, f. 8, 1865; Dn.

——: Burrard Inlet, British Columbia.

Leguminosites sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874].

——: Elko Station, Nevada.

Leguminosites sp., Lx. Cret. and Tert. Fl., p. 203, pl. xxxix, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

Leguminosites sp., Lx. Proc. U. S. Nat. Mus., vol. x, p. 43, 1887.

——: Upper Kanab Valley, Utah.

Leguminosites sp., Lx. In Diller, Eighth Ann. Rept. U. S. Geol. Surv., p. 420, 1889.

Miocene?: Lassen County, California.

Leguminosites sp., Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 21, 1893.

Dakota group: Goodhue Township, Minnesota.

Leguminosites sp., Lx. Proc. U. S. Nat. Mus. vol. xi, p. 30, 1888.

Eocene?: Lassen County, California.

LEMNA Linnaeus. Syst., ed. i, 1735.

Lemna ? bullata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 363, 1875 [1876].

Laramie group: Point of Rocks, Wyoming.

Lemna penicillata Lx. Cret. and Tert. Fl., p. 143, pl. xxiii, f. 8, 1883.

Green River group: Florissant, Colorado.

Lemna scutata Dn. Rept. on Geol. 49th Parallel, Appen. A, p. 329, pl. xvi, f. 5, 6, 1875; Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 23, pl. i, f. 6, 1886 [1887].

Fort Union group: Burns's Ranch, Montana.

Lignitic Tertiary: Near forty-ninth parallel.

Montana group: Point of Rocks, Wyoming.

Laramie group: Wood Mountain, Pincher Creek, British Columbia.

LEPTOSTROBUS Heer. Fl. Foss. Arct., vol. iv, abt. ii: Mém. Acad. Imp. Sci. St. P., 7th ser., vol. xxii, no. 12, p. 72, 1876.

Leptostrobos foliosus Font. Potomac Fl., p. 230, pl. ci, f. 4; ciii, f. 5; civ, f. 1, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Leptostrobos longifolius Font. Potomac Fl., p. 228, pl. ci, f. 2, 3; cii, f. 1-4; ciii, f. 6-12; civ, f. 6, 1889.

Potomac formation: Fredericksburg, near Brooke, near Potomac Run, and near Dutch Gap Canal, Virginia.

Kootanie: Anthracite and Canmore, British Columbia.

Leptostrobos ? multiflorus Font. Potomac Fl., p. 230, pl. clxv, f. 6, 1889.

Potomac formation: near Brooke, Virginia.

Leptostrobos ? seeds of, sp., Font. Potomac Fl., p. 332, pl. cxxxvi, f. 11, 1889.

Potomac formation: Kankeys, Virginia.

Leptostrobos ? seeds of, (a) sp., Font. Potomac Fl., p. 231, pl. cxxxv, f. 6, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Leptostrobos ? seeds of, (b) sp., Font. Potomac Fl., p. 231, pl. cxxxvi, f. 10, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

LEUCOTHOE D. Don. In Edinb. N. Phil. Journ., vol. xvii, p. 159, 1834.

Leucothoë racemosa (L.) A. Gray. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Libocedrus cretacea Heer=*Thuja cretacea*.

Lindera=Benzoin.

Lindera Masoni Lx.=Benzoin Masoni.

Lindera venusta Lx.=Benzoin venusta.

LIQUIDAMBAR Linnaeus. Hort. Cliff, p. 486, 1737.

Liquidambar californicum Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 14, pl. vi, f. 7c; pl. vii, f. 3, 6, 1878.

Miocene: Chalk Bluffs, California.

Liquidambar europæum Al. Br. In Buckl. Geol., vol. i, p. 115, 1836? Lx., Cret. and Tert. Fl., p. 159, pl. xxxii, f. 1, 1883.

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene?: Port Graham, Alaska.

Liquidambar europæum Al. Br., Lesquereux, 1888 = *Liquidambar styraciflua* L.

Liquidambar gracilis Lx.=*Aralia?* *gracilis*.

Liquidambar integrifolius Lx. Am. Journ. Sci., vol. xlvi, p. 93, 1868; Cret. Fl., p. 56, pl. ii, f. 1-3; xxiv, f. 2; xxix, f. 8, 1874.

Dakota group: Salina, Kansas.

Mill Creek series: Mill Creek.

Liquidambar protensum Ung. Steiermärk. Zeitschr., n. Folge, ix Jahrg., p. 59 [36], 1848; Gen. et Sp. Pl. Foss., p. 415, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 13, pl. viii, f. 3, 1888.

Miocene: John Day Valley, Oregon.

Liquidambar styraciflua L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Liquidambar europæum Al. Br. Lesquereux, Proc. U. S. Nat. Mus., vol. xi, p. 36, 1888.

Miocene?: Bridgeton, New Jersey.

Glacial: Morgantown, West Virginia.

LIRIODENDRON Linnaeus. Spec. Pl., p. 535, 1753.

Liriodendron acuminatum Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881; Lx., Fl. Dak. Gr., p. 207, pl. xxvii, f. 2, 3, 1892.

Dakota group: Kansas.

Liriodendron acuminatum bilobatum Lx. Fl. Dak. Gr., p. 207, pl. xxviii, f. 4, 1892.

Dakota group: Kansas.

Liriodendron alatum Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, no. 11, p. 467, pl. 220, 221, 1894.

Laramie group: Walsenburg, Colorado.

Liriodendron cruciforme Lx.=*L. giganteum cruciforme*.

Liriodendron giganteum Lx. Am. Journ. Sci., vol. xlv, p. 99, 1868;
Cret. Fl., p. 93, pl. xxii, f. 2, 1874.

Dakota group: Fort Harker, Kansas.

Liriodendron giganteum cruciforme Lx. Fl. Dak. Gr., p. 206, pl. xxviii, f. 1, 2, 1892.

Liriodendron cruciforme Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881.

Dakota group: Kansas.

Liriodendron intermedium Lx. Am. Journ. Sci., vol. xlv, p. 99, 1868;
Fl. Dak. Gr., p. 207, pl. xxv, f. 1, 1892.

Dakota group: Southern Nebraska; Kansas.

Liriodendron laramiense Ward. Bull. U. S. Geol. Surv., no. 37, p. 102, pl. xlviii, f. 2, 1887.

Montana formation: Point of Rocks, Wyoming.

Liriodendron oblongifolium Newby. Bull. Torr. Bot. Club, vol. xiv, no. 1, p. 5, pl. lxi, f. 1, 1887; Hollick, op. cit., vol. xxi, p. 62, pl. 179, f. 3, 1894.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Long Island.

Liriodendron Meekii Heer. Proc. Phila. Acad. Sci., vol. x, p. 265, 1858; Phyll. Crét. d. Nebr., p. 21, pl. iv, f. 3, 4, 1866; Fl. Dak. Gr., p. 205, pl. xxviii, f. 5, 6, 1892.

Dakota group: Mouth of Big Sioux, Nebraska.

Liriodendron Meekii var. *Marcouana* Heer = **Liriodendron primævum**.

Liriodendron Meekii var. *mucronulata* Heer = **Liriodendron primævum**.

Liriodendron Meekii var. *obcordata* Heer = **Liriodendron primævum**.

Liriodendron pinnatifidum Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881; Fl. Dak. Gr., p. 209, pl. xxvii, f. 4, 5, 1892.

Dakota group: Kansas.

Liriodendron prætulipiferum Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. viii, f. 27, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

Liriodendron primævum Newby. Later Extinct Floras, p. 12, 1868;
Lx., Fl. Dak. Gr., p. 203, pl. xxiv, f. 4; xxvi, f. 1-4, 1892.

Leguminosites *Marcouanus* Heer. Proc. Phil. Acad. Sci., vol. x, p. 265, 1858.

Bumelia Marcouana (Heer) Lx. Cret. Fl., p. 90, pl. xxviii, f. 2, 1874.

Phyllites obcordatus Heer. Proc. Phil. Acad. Sci., vol. x, p. 266, 1858.

Liriodendron Meekii var. *Marcouana* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 88, 1882.

Liriodendron Meekii var. *obcordata* Heer. Op. cit., p. 88, 1882.

Liriodendron Meekii var. *mucronulata* Heer. Op. cit., p. 88, 1882.

Phyllites cotinus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 364, 1874 [1876].

Dakota group: Kansas and Nebraska.

Cretaceous: Staten Island, Long Island, New York.

Liriodendron quercifolium Newby. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 1, 1887; Fl. Amboy Clays, p. 81, pl. li, f. 1-6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Liriodendron semialatum Lx. Bull. Mus. Comp. Zool. Camb., vol. vii, p. 227, 1881; Fl. Dak. Gr., p. 204, pl. xxv, f. 2-4; pl. xxix, f. 3, 1892.

Dakota group: Kansas.

Liriodendron simplex Newby. = **Liriodendropsis simplex** + **L. angustifolia**.

Liriodendron Snowii Lx. Fl. Dak. Gr., p. 209, pl. xxix, f. 1, 2, 1892.

Dakota group: Kansas.

Liriodendron succedens Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. viii, f. 26, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Liriodendron Wellingtonii Lx. Fl. Dak. Gr., p. 208, pl. xxviii, f. 3, 1892.

Dakota group: Kansas.

Liriodendron sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards referred to by author.]

Laramie group?: Six miles above Spring Canyon, Montana.

LIRIODENDROPIS Newberry. Fl. Amboy Clays, p. 82, 1895 [1896].

Liriodendropsis angustifolia Newby. Fl. Amboy Clays, p. 84, pl. liii, f. 8, 1895 [1896].

Liriodendron simplex Newby., in part. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 4, 1887.

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

Liriodendropsis simplex Newby. Fl. Amboy Clays, p. 83, pl. xix, f. 2, 3; liii, f. 1-4, 7, 1895 [1896].

Liriodendron simplex Newby., in part. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 2, 3, 1887.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

LIRIOPHYLLUM Lesquereux. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 482, 1876 [1878].

Liriophyllum Beckwithii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 482, 1876 [1878]; Cret. and Tert. Fl., p. 76, pl. x, f. 1, 1883; Fl. Dak. Gr., p. 210, 1892.

Dakota group: Morrison, Colorado.

Liriophyllum obcordatum Lx. Cret. and Tert. Fl., p. 77, 1883; Fl. Dak. Gr., p. 210, pl. xxviii, f. 7, 1892.

Dakota group: Morrison, Colorado.

Liriophyllum populoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 483, 1876 [1878]; Cret. and Tert. Fl., p. 76, pl. xi, f. 1, 2, 1883.

Dakota group: Colorado and Kansas.

Litsea = **Malapoenna**.

Litsæa carbonensis Ward = **Malapoenna carbonensis**.

Litsea cretacea Lx. = **Malapoenna cretacea**.

Litsea falcifolia Lx. = *Malapoenna falcifolia*.

Litsea Weediana Kn. = *Malapoenna Weediana*.

Litsea sp., Kn. = *Malapoenna* sp.

LOMATIA Robert Brown. Trans. Linn. Soc. Lond., vol. x, p. 199, 1810.

Lomatia abbreviata Lx. Cret. and Tert. Fl., p. 167, xliii, f. 17, 1883.
Green River group: Florissant, Colorado.

Lomatia acutiloba Lx. Cret. and Tert. Fl., p. 167, pl. xliii, f. 11-16, 20, 1883.

Green River group: Florissant, Colorado.

Lomatia hakeæfolia Lx. Cret. and Tert. Fl., p. 166, pl. xxxii, f. 19, 1883.

Green River group: Florissant, Colorado.

Lomatia interrupta Lx. Cret. and Tert. Fl., p. 167, pl. xliii, f. 18, 19, 1883.

Green River group: Florissant, Colorado.

Lomatia microphylla Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 389, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Tert. Fl., p. 211, pl. lxxv, f. 14, 15, 1878.

Green River group: Mouth of White River.

Lomatia ? *Saportanea* Lx. Ann. Rept. U. S. Geo. and Geogr. Surv. Terr., p. 346, 1874 [1876]; Cret. and Tert. Fl., p. 51, pl. iii, f. 8, 1883.

Todea ? *Saportanea* Lx. Cret. Fl., p. 48, pl. xxix, f. 1-4, 1874.

Dakota group: Kansas.

Lomatia ? *Saportanea* var. *longifolia* Lx. Cret. and Tert. Fl., p. 52, 1883.

Dakota group: Morrison, Colorado.

Lomatia spinosa Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 1, 1883.

Green River group: Florissant, Colorado.

Eocene?: Similkameen Valley, British Columbia.

Lomatia terminalis Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 2-7, 1883.

Green River group: Florissant, Colorado.

Lomatia tripartita Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 8-10, 1883.

Green River group: Florissant, Colorado.

LONCHOCARPUS Humboldt Bonpland and Kunth. Nov. Gen. et Sp., vol. vi, p. 383, 1823.

Lonchocarpus novæ-cæsareæ Hollick. Bull. Torr. Bot. Club, vol. xxiii, p. 49, pl. cclix, f. 6-8, 1896.

Miocene?: Bridgeton, New Jersey.

LYCOPODIUM (Ruppino) Linnaeus. Gen. Pl., p. 323, 1737.

Lycopodium Lesquereuxii Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Selaginella falcata Lx. Ex. p. Lx., Tert. Fl., p. 46, pl. lxxiv, f. 13, 13a [non pl. lxi, f. 12-15], 1878.

Montana formation: Point of Rocks, Wyoming.

Lycopodium prominens Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874]; Tert. Fl., p. 45, pl. v, f. 13-13b, 1878.
Green River group: Elko Station, Nevada.

Lycopodium sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

Lycopodium sp. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 1896.

Pleistocene: Long Portage, Missinaibi River; Scarboro Heights, Ontario.

LYGODIUM Swartz. Schrad. Journ. Bot., vol. ii, p. 106, 1800.

Lygodium compactum Lx. Am. Journ. Sci., vol. xvi, p. 206, 1868; Tert. Fl., p. 64, pl. v, f. 9, 1878.

Laramie group: Coal Creek, Colorado.

Lygodium Dentoni Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 63, pl. lxv, f. 12, 13, 1878.

Green River group: Mouth of White River into Green River.

Lygodium Marvinei Lx. Bull. U. S. Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 62, pl. v, f. 8, 1878.

———?: Eagle Junction.

Lygodium Kaulfusii Heer. Beiträge z. nähern Kennt. d. Sächs.-Thuring. Braunkohle, p. 409, pl. viii, f. 21, 1861.

Lygodium neuropteroides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1871]; Tert. Fl., p. 61, pl. v, f. 4-7; pl. vi, f. 1, 1878.

Green River group?: Barrell Springs, Wyoming.

Eocene?: Cherry and Crescent creeks, Oregon.

Eocene: Elk Creek, Yellowstone National Park; Wilkinson coal field, Washington; Cherry Creek, Oregon.

Lygodium neuropteroides Lx. = *Lygodium Kaulfusii*.

Lygodium trichomanoides Lx. Cret. Fl., p. 45, pl. i, f. 2, 1874.

Lygodium? sp., Lx. Am. Journ. Sci., vol. xlvi, p. 91, 1868.

Dakota group: Fort Harker, Kansas.

Lygodium? sp., Lx. [Am. Journ. Sci., xlvi, 91, 1868] = *Lygodium trichomanoides*.

MACCLINTOCKIA Heer. Fl. Foss. Arct., vol. i, p. 114, 1868.

Macclintockia cretacea Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 70, pl. xxxvi, f. 1a; pl. xxxvii, f. 2-4, 1882; Lx., Fl. Dak. Gr., p. 197, pl. lix, f. 4, 1892; Dn., Trans. Roy. Soc. Canada, vol. iii, p. 13, pl. iv, f. 3, 1885.

Dakota group: Kansas.

Mill Creek series: Mill Creek.

Macclintockia Lyallii Heer. Fl. Foss. Arct., vol. i, p. 115, pl. xv, f. 1a, 2; xvi, f. 7a, b; xvii, f. 2a, b; xlvii, f. 13; xlviii, f. 8, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

———?: Black Buttes, Wyoming.

Macclintockia trinervis Heer. Fl. Foss. Aret., vol. i, p. 115, pl. xv, f. 7-9, 1868; Dn., Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, pl. x, f. 38, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Maclura auriantia Nutt. = *Toxylon pomiferum*.

MACREIGHTIA Alphonse de Candolle. Prod., vol. viii, p. 220, 1844.

Macreightia crassa Lx. Cret. and Tert. Fl., p. 175, pl. xxxiv, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

Macrospores? sp., Font. Potomac Fl., p. 274, pl. cxxxvi, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

MACROTÆNIOPTERIS Schimper. Pal. Vég., vol. i, p. 610, 1869.

Macrotaeniopteris vancouverensis Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 55, pl. v, f. 1-3, 1893 [1894].

Upper Cretaceous: Nanaimo.

MAGNOLIA Linnæus. Syst., ed. i, 1735.

Magnolia acuminata L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Magnolia alternans Heer. Phyll. Crét. d. Nebr., p. 20, pl. iii, f. 2-4; pl. iv, f. 1, 2, 1866; Cret. Fl., p. 92, pl. xviii, f. 4, 1874; Lx., Fl. Dak. Gr., p. 201, pl. xxxiv, f. 11, 1892; Newby., Fl. Amboy Clays, p. 73, pl. iv, f. 1, 2, 4, 6, 1895 [1896].

Dakota group: Nebraska, Kansas, and Minnesota.

Amboy clay: Woodbridge and Sayreville, New Jersey.

Magnolia alternans Heer, Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]. [Not same as Dakota group plant; affinity not stated by Lesquereux and apparently not afterwards mentioned.]

Laramie group?: Three miles above Spring Canyon, Montana.

Magnolia amplifolia Heer. Kreidefl. v. Moletein in Mähren, Neue Denkschr. Schw. Ges., vol. xxiii, p. 21, pl. viii, f. 2; ix, f. 1, 1869; Lx., Fl. Dak. Gr., p. 200, pl. xxiv, f. 3, 1892.

Dakota group: Kansas.

Magnolia angustifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 513 1882 [1883].

Magnolia attenuata Web. in Lx. Tert. Fl., p. 250, pl. xlv, f. 6, 1878.

Laramie group: Fishers Peak, New Mexico.

Magnolia attenuata O. Web. Lesquereux, 1878 = *Magnolia angustifolia*.

Magnolia auriculata Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 61, pl. clxxix, f. 6, 7, 1894; Newby., Fl. Amboy Clays, p. 75, pl. xli, f. 13; lviii, f. 1-11, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.

Magnolia Boulayana Lx. Fl. Dak. Gr., p. 202, pl. lx, f. 2, 1892.

Dakota group: Kansas.

Magnolia californica Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 25, pl. vi, f. 5-7, 1878.

Miocene: Chalk Bluffs and Contra Costa, California.

Eocene: Lassen County, California.

Magnolia Capellinii Heer. Phyll. Crét. d. Nebr., p. 21, pl. iii, f. 5, 6, 1866; Lx., Rept. on Clays in N. J., p. 29, 1878; Fl. Dak. Gr., p. 203, pl. lxvi, f. 1, 1892.

Dakota group: Tekamah, Nebraska.

Amboy clay: Sayreville, New Jersey?

Cretaceous: Glen Cove, Long Island; Marthas Vineyard; Port McNeill, Vancouver Island.

Magnolia cordifolia Lx. Trans. Am. Phil. Soc., vol. xiii, p. 422, pl. xxii, f. 1, 2, 1869.

Eolignitic: Mississippi.

Magnolia ensifolia Lx. = *Celastrorhynchium ensifolium*.

Magnolia glauca L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Magnolia glaucoides Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 60, pl. clxxv, f. 1, 7, 1894; Newby., Fl. Amboy Clays, p. 74, pl. lvii, f. 1-4, 1895 [1896].

Cretaceous: Sea Cliff, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

Magnolia Hilgardiana Lx. Second Rept. Geol. Recon. Arkansas, p. 319, pl. vi, f. 1, 1860; Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xxi, f. 1, 1869; Tert. Fl., p. 249, pl. xliv, f. 4, 1878.

Eolignitic: Mississippi.

Eocene: Lassen County, California.

Fort Union group: Yellowstone Valley, Montana.

Laramie group: Fishers Peak, New Mexico.

Magnolia Inglefieldi Heer. Fl. Foss. Arct., vol. i, p. 120, pl. iii, f. 5c; xvi, f. 5, 6, 8b; xviii, f. 1-3, 1868; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 13, 1888.

Miocene: John Day Valley, Oregon.

Eocene?: Lassen County, California.

Magnolia Inglefeldi Heer. Lesquereux, Hayden's Ann. Rept., 1872, p. 396 = *Magnolia tenuinervis*.

Magnolia Isbergiana Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 91, pl. xxxvi, f. 3, 1882; Hollick, Bull. Torr. Bot. Club., vol. xxi, p. 60, 1894.

Cretaceous: Glen Cove, Long Island.

Magnolia Lacoeana Lx. Fl. Dak. Gr., p. 201, pl. lx, f. 1, 1892; Newby., Fl. Amboy Clays, p. 73, pl. lv, f. 1, 2, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Magnolia lanceolata Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 24, pl. vi, f. 4, 1878.

Miocene: Chalk Bluffs, California; John Day Valley, Oregon.

Miocene?: Cherry Creek, Oregon.

Magnolia laurifolia Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xx, f. 2, 3, 1869.

Eolignitic: Mississippi; Cross Lake and McLees, Louisiana.

Magnolia Lesleyana Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xxi, f. 1, 2, 1869; Tert. Fl., p. 248, pl. xliv, f. 1-3, 1878.

Terminalia Radobojensis Heer. Lx., Ann. Rept., op. cit., 1871, suppl., p. 15, 1871 [1872].

Eolignitic: Mississippi.

Laramie group: Raton Mountains, New Mexico.

Laramie group?: Evanston, Wyoming?

Magnolia longifolia Newby. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. iii, f. 9, 1892; Newby., Fl. Amboy Clays, p. 76, pl. lv, f. 3, 5; lvi, f. 1-4, 1895 [1896].

Cretaceous: Staten Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

Magnolia longipes Newby. In MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 60, pl. clxxviii, f. 3, 1894; Newby., Fl. Amboy Clays, p. 76, pl. liv, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Dosoris Island, Long Island.

Magnolia magnifica Du. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. iii, f. 11, 1882 [1883].

Mill Creek series: Coal Brook, Northwest Territory; Mill Creek.

Magnolia Nordenskiöldi Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 82, pl. xxi, f. 3; xxx, f. 1, 1877; Lx., Proc. U. S. Nat. Mus., vol. v, p. 448, 1882 [1883].

Eocene?: Chignik Bay, Alaska.

Magnolia obovata Newby. Later Extinct Floras, p. 15, 1868.

Dakota group: Blackbird Hill, Nebraska.

Magnolia obtusata Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 90, pl. xv, f. 12; pl. xxi, f. 3, 1882; Lx., Fl. Dak. Gr., p. 201, pl. lx, f. 5, 6, 1892.

Dakota group: Kansas.

Magnolia occidentalis Du. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. x, f. 36, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

Magnolia ovalis Lx. Trans. Am. Phil. Soc., vol. xiii, p. 422, pl. xxi, f. 3, 4, 1869.

Eolignitic: Mississippi.

Magnolia pseudoacuminata Lx. Fl. Dak. Gr., p. 199, pl. xxiv, f. 2, 1892.

Dakota group: Kansas.

Magnolia pulchra Ward. Bull. U. S. Geol. Surv., no. 37, p. 103, pl. xlviii, f. 3, 4, 1887.

Montana formation: Point of Rocks, Wyoming.

Magnolia rotundifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Laramie group: Fishers Peak, New Mexico.

Magnolia speciosa Heer. Neue Denkschr. Schw. Gesel., vol. xxiii, p. 20, pl. vi, fig. 1; ix, f. 2; x, f. 1, 1869; Lx., Cret. and Tert. Fl., p. 72, 1874; Fl. Dak. Gr., p. 202, pl. lx, f. 3, 4, 1892.

Dakota group: Morrison, Colorado.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Massachusetts.

Magnolia tenuifolia Lx. Am. Journ. Sci., vol. xlvi, p. 100, 1868; Cret. Fl., p. 92, pl. xxi, f. 1, 1874; Fl. Dak. Gr., p. 198, pl. xxiv, f. 1, 1872.

Dakota group: Decatur, Nebraska; Kansas; Peace River, Northwest Territory.

Magnolia tenuinervis Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868; Tert. Fl., p. 249, pl. xlv, f. 5, 6; pl. xlv, f. 1-5, 1878.

Magnolia Inglefeldi? Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873].

Denver group: Golden, Colorado.

Laramie group: Black Buttes and Hogdes Pass, Wyoming.

Laramie group?: Coalville, Utah?

Magnolia Van Ingeni Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 61, pl. clxxv, f. 6, 1894.

Cretaceous: Sea Cliff, Long Island.

Magnolia woodbridgensis Hollick in Newby. Fl. Amboy Clays, p. 74, pl. xxxvi, f. 11; lvii, f. 5-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Magnolia sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Eocene?: Washakie Station, Wyoming.

Magnolia sp., Lx. Cret. and Tert. Fl., p. 73, pl. xi, f. 6, 1883.

Dakota group: Morrison, Colorado.

Magnolia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

Magnolia ? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 29, 1890.

Eocene?: Similkameen Valley, British Columbia.

MAJANTHEMOPHYLLUM O. Weber. Tertiärl. d. Niederrh. Braunkohlenf.: Paleontographica, vol. ii, p. 156 [reprint 42], 1852.

Majanthemophyllum pusillum Heer. Fl. Foss. Arct., vol. vii, p. 18, pl. lv, f. 17, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. i, f. 7, 1892.

Cretaceous: Staten Island.

MALAPOENNA Adanson. Fam. Pl., vol. ii, p. 447, 1763.

Malapoenna carbonensis (Ward) n. comb.

Litsea carbonensis Ward. Bull. U. S. Geol. Surv., no. 37, p. 48, pl. xxiv, f. 1, 1887.

Laramie group: Carbon, Wyoming.

Malapoenna cretacea (Lx.) n. comb.

Litsea cretacea Lx. Fl. Dak. Gr., p. 96, pl. xv, f. 2, 1892.

Dakota group: Kansas.

Malapoenna falcifolia (Lx.) n. comb.

Litsea falcifolia Lx. Fl. Dak. Gr., p. 97, pl. xi, f. 5, 1892.

Dakota group: Kansas.

Malapoenna sessiliflora (Lx.) n. comb.

Laurus sessiliflora Lx. Ann. Rept., op. cit., p. 407, 1873 [1874].

Tetranthera sessiliflora Lx. Ex. p. Tert. Fl., p. 217, pl. xxxiv, f. 1 c, 1 d; pl. xxxv, f. 8 [non f. 9], 1878.

———: Evanston, Wyoming.

Malapoenna Weediana (Kn.) n. comb.

Litsea Weediana Kn. Bull. U. S. Geol. Surv., no. 105, p. 55, 1893.

Tetranthera sessiliflora Lx. Ex. p. Tert. Fl., p. 217, pl. xxxv, f. 9, 1878.

Livingston beds: Bozeman coal field, Montana.

Malapoenna sp.

Litsea sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

MANICARIA Gærtner. De Fruct., vol. ii, p. 468, 1802.

Manicaria Haydeni Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene: Green River, Wyoming.

Manicaria sp., Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 143, 1895-96.

Eocene: Burrards Inlet, Vancouver, British Columbia.

MARSILEA (Micheli) Linnaeus. Gen. Pl., p. 326, 1737.

Marsilea attenuata (Lx.) Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 10, 1894.

Salvinia attenuata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 377, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1874 [1876]; Tert.

Fl., p. 65, pl. lxiv, f. 14, 14a, 1878.

Laramie group: Point of Rocks, Wyoming.

Marsilea Bendirei Ward = *Porana Bendirei*.

MENISPERMITES Lesquereux. Cret. Fl., p. 94, 1874.

Menispermities acerifolia Lx. = *Menispermities menispermifolia*.

Menispermities acutilobus Lx. Cret and Tert. Fl., p. 78, pl. xiv, f. 2, 1883.

Dakota group: Kansas.

Menispermities borealis Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 91, pl. xxxix, f. 2, 1882; Newby., Fl. Amboy Clays, p. 84, pl. 1, f. 1-6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Menispermities Brysoniana Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 59, pl. clxx, f. 10, 1894.

Cretaceous: Glen Cove, Long Island.

Menispermities cyclophyllus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 358, pl. vi, f. 4, 1874 [1876].

Dakota group: Kansas.

Menispermities grandis Lx. Cret. and Tert. Fl., p. 80, pl. xv, f. 1, 2, 1883.

Dakota group: Kansas.

Menispermities menispermifolius (Lx.) n. comb.

Acerites menispermifolius Lx. Am. Journ. Sci., vol. xlv, p. 101, 1868.

Menispermities acerifolia Lx. Cret. Fl., p. 96, pl. xx, f. 2, 3, 1874.

Dakota group: Decatur, Nebraska.

Menispermities obtusiloba Lx. Cret. Fl., p. 94, pl. xxv, f. 1-2; xxvi, f. 3, 1874; Cret. and Tert. Fl., p. 78, 1883.

Menispermities obtusiloba var.? Cret. Fl., p. 95, pl. xxii, f. 1, 1874.

Dombeyopsis obtusiloba Lx. Am. Journ. Sci., vol. xlv, p. 100, 1868.

Dakota group: Salina River, Kansas.

Menispermities ovalis Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 398, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 357, pl. v, f. 4, 1874 [1876].

Dakota group: Kansas.

Menispermities populifolius Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 357, pl. v, f. 3, 1874 [1876]; Cret. and Tert. Fl., p. 79, pl. iv, f. 4, 1883.

Dakota group: Kansas.

Menispermities reniformis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iii, f. 12, 1882 [1883].

——: Coal Brook, Northwest Territory.

Menispermities rugosus Lx. Fl. Dak. Gr., p. 196, pl. xxix, f. 7, 1892.

Dakota group: Kansas.

Menispermities salinensis Lx. = *Menispermities salinae*.

Menispermities salinae (Lx.) n. comb.

Acer obtusilobium? Ung. Lesquereux, Am. Journ. Sci., vol. xlv, p. 100, 1868.

Populites salinae Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

Menispermities salinensis Lx. Cret. Fl., p. 95, pl. xx, f. 1, 4, 1874.

Dakota group: Salina River, Kansas.

Menispermities tenuinervis Font. Potomac Fl., p. 322, pl. clxxii, f. 8, 1889.

Potomac formation: Baltimore, Maryland.

Menispermities virginensis Font. Potomac Fl., p. 321, pl. clxi, f. 1, 2, 1889.

Potomac formation: Near Brooke, Virginia.

Menispermities Wardianus Hollick in Newby. Fl. Amboy Clays, p. 85, pl. xxix, f. 9, 11, 1895 [1896].

Amboy clay: No locality.

Menispermities sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. xi, f. 50, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Menispermities sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 131, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

MENISPERMUM Linnæus. Syst., ed. i, 1735.

MENYANTHES Linnæus. Syst., ed. i, 1735.

Menyanthes trifoliata L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890.

Pleistocene: Montreal, Canada.

MEZONEURUM Desfontaines. Mem. Mus. Paris, vol. iv, p. 245, 1818.

Mezoneurum bridgetonense Hollick.

Mezoneurum bridgetonense Hollick. Bull. Torr. Bot. Club, vol. xxiii, p. 49, pl. clviii, f. 1-7, 1896.

Pleistocene?: Bridgeton, New Jersey.

MICROZAMIA Corda in Reuss. Verst. d. Böhm. Kreidef., abt. ii, p. 85, 1846.

Microzamia gibba (Reuss) Corda in Reuss. Verst. d. Böhm. Kreidef. abt. ii, p. 85, 1846; Newby., Fl. Amboy Clays, p. 45, pl. xii, f. 6, 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

MIMOSITES Bowerbank. Hist. Foss. Fr. and Seeds London clay, p. 140, 1840.

Mimosites linearis* (Lx.) n. comb.

Mimosites linearifolius Lx. Tert. Fl., p. 300, pl. lix, f. 7, 1878.

Cæsalpinia? linearis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874].

[*Non M. linearis Engelh., 1894.]

Green River group: Florissant, Colorado.

MONIMOSOPS Saporta. Prod. Fl. Foss. d. Sézanne: Mem. Soc. Geol. d. France, 2d ser., vol. vii, p. 361, 1868.

?**Monimiopsis amboræfolia** Sap. Foss. Fl. d. Sézanne, p. (73) 361, pl. (viii) xxix, f. 13, 1868; Ward, Bull. U. S. Geol. Surv. no. 37, p. 51, pl. xxv, f. 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

?**Monimiopsis fraterna** Sap. Fl. Foss. d. Sézanne, p. (74) 362, pl. (viii) xxix, f. 14, 1868; Ward, Bull. U. S. Geol. Surv. no. 37, p. 52, pl. xxv, f. 3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

MORICONIA Debey and Ettingshausen. Urweltlichen Acrobryen v. Aachen: Denkschr. Wien. Akad., vol. xvii, p. 339 [59], 1859.

Moriconia cyclotoxon Deb. and Ett. *Urweltlichen Acrobryen v. Aachen* (Denkschr. Wien. Akad., vol. xvii, p. 239), p. 59, pl. vii, f. 23-27, 1859; Newby., *Fl. Amboy Clays*, p. 55, pl. x, f. 11-21, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

MORUS (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

Morus affinis Lx. *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.* 1871, suppl., p. 11, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group ? : Evanston, Wyoming.

Morus sp., Hollick. *Bull. Torr. Bot. Club*, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Muscites Sternbergianus Dunk. = *Sphenolepidium Sternbergianum*.

MUSOPHYLLUM Göppert. *Tertiärlfl. d. Insel Java*, p. 39, 1854.

Musophyllum complicatum Lx. *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 418, 1873 [1874]; *Tert. Fl.*, p. 96, pl. xv, f. 1-6, 1878.

Green River group?: Green River Station Wyoming?

Laramie group: Golden, Colorado.

MYRICA DeCandolle. *Ex. Guill. in Dict. Class. Hist. Nat.*, vol. xi, pp. 378, 401, 1826.

Myrica acuminata Ung. *Synop. Pl. Foss.*, p. 214, 1845; Lx., *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 411, 1873 [1874]; *Tert. Fl.*, p. 130, pl. xvii, f. 1-4, 1878.

Green River group: Florissant, Colorado; mouth of White River, Utah.

Myrica acuta Hollick in Newby. *Fl. Amboy Clays*, p. 65, pl. xlii, f. 35, 1895 [1896].

Amboy clay: No location.

Myrica alkalina Lx. *Cret. and Tert. Fl.*, p. 149, pl. xlvA, f. 10-15, 1883.

Green River group: Alkali Station, Wyoming.

Myrica amaygdalina Sap. *Ann. d. Sci. Nat.*, 5th ser., bot., vol. ix, p. 21 [153], pl. i, f. 8-10, 1867; Lx., *Cret. and Tert. Fl.*, p. 147, pl. xxvi, f. 1-4, 1883.

Green River group: Florissant, Colorado.

Myrica ambigua Lx. = *Celastrinites ambiguus*.

Myrica aspera Lx. *Fl. Dak. Gr.*, p. 66, pl. ii, f. 11, 1892.

Dakota group: Kansas.

Myrica banksiæfolia Ung. *Synop. Pl. Foss.*, p. 214, 1845; Heer, *Fl. Foss. Alask.*, p. 28, pl. ii, f. 11, 1869.

Eocene?: Port Graham, Alaska.

Bull. 152—10

Myrica Bolanderi Lx. Tert. Fl., p. 133, pl. xvii, f. 17, 1878.

Ilex undulata * Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874].

[* *M. undulata*. Preoccupied by *M. undulata* Heer, Fl. Tert. Helv., iii, p. 188, 1859.]

Green River group?: Locality unknown.

Myrica Brongniarti ? Ett. Tert. Fl., p. 135, pl. xvii, f. 15, 1878.

Myrica (*Comptonia*) *Brongniarti* ? Ett in Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874].

Green River group: Elko Station, Nevada.

Myrica brookensis Font. Potomac Fl., p. 310, pl. cl, f. 11; pl. clvi, f. 10, 1889.

Potomac formation: Near Brooke, Virginia.

Myrica calicomæfolia Lx. = *Myrica drymeja*.

Myrica cinnamomifolia Newby. Fl. Amboy Clays, p. 64, pl. xxii, f. 9-14, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

Myrica Copiana Lx. Am. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 411, 1873 [1874]; Tert. Fl., p. 131, pl. xvii, f. 5, 1878.

Green River group: Florissant, Colorado.

Eolignitic: Wickliffe, Kentucky.

Myrica cretacea Lx. = *Myrica dakotensis*.

Myrica (*Comptonia*) **cuspidata** (Lx.) Dn. Trans. Roy. Soc. Canada 1890, vol. viii, p. 80, f. 9, 1890.

Comptonia cuspidata Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 10-12, 1882 [1883].

Eocene?: Unga Island, Alaska.

Myrica dakotensis * Lx. Cret. and Tert. Fl., p. 35, pl. iv, f. 9, 1883.

Myrica cretacea Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 339, pl. iii, f. 4, 1874 [1876].

[* *Myrica cretacea* Lx. Preoccupied by *M. cretacea* Heer, Fl. Quedl.]

Dakota group: Fort Harker, Kansas.

Myrica Davisii Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. ii, f. 3, 1892.

Cretaceous: Staten Island.

Myrica diversifolia Lx. = *Crataegus flavescens*.

Myrica drymeja (Lx.) n. comb.

Myrica callicomæfolia Lx. Cret. and Tert. Fl., p. 146, pl. xxvi, f. 5-14, 1883.

Callicoma microphylla Ett. Lx., Tert. Fl., p. 246, pl. xliii, f. 2-4, 1878.

Rhus? *drymeja* Lx. Ann. Rept., op. cit., p. 416, 1873 [1874].

Green River group: Florissant, Colorado; Elko Station, Nevada.

Myrica elæanoides Lx. Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 5, 1888.

Eolignitic: Wickliffe, Kentucky.

Myrica emarginata Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 66, pl. xli, f. 2, 1882; in Lx., Fl. Dak. Gr., p. 67, pl. xii, f. 1, 1892; Newby., Fl. Amboy Clays, p. 62, pl. xli, f. 10, 11, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey?

Myrica fallax Lx. Cret. and Tert. Fl., p. 147, pl. xxxii, f. 11-16, 1883.
Green River group: Florissant, Colorado.

Myrica fenestrata Newby. Fl. Amboy Clays, p. 63, pl. xliii, f. 32, 1895
[1896].

Amboy clay: Sayreville, New Jersey.

Myrica grandifolia Hollick = **Myrica Hollicki**.

Myrica Hollicki Ward. Am. Journ. Sci., vol. xlv, p. 437, 1893.

Myrica grandifolia *Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. iii,
f. 1, 1892.

[*Preoccupied by *M. grandifolia* (Ung.) Schimp. Pal. Vég., vol. ii, p. 559,
1872.]

Cretaceous: Staten Island.

Myrica ? idahoensis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv.,
pt. iii, p. 724, pl. xcix, f. 7, 1898.

Payette formation: Marsh, Idaho.

Myrica insignis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,
p. 312, 1874 [1876]; Tert. Fl., p. 135, pl. lxxv, f. 7, 8, 1878.

Green River group: Florissant, Colorado.

Myrica lanceolata Kn. Eighteenth Ann. Rept. U. S. Geol. Surv.,
pt. iii, p. 724, pl. xcix, f. 5, 6, 1898.

Payette formation: Shafer Creek, Boise County, Idaho.

Myrica latiloba Heer, var. **acutiloba** Lx. Ann. Rept. U. S. Geol. and
Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 134, pl. xvii,
f. 13, 1878.

Green River group: Florissant, Colorado.

Myrica Lessigiana Lx. = **Artocarpus Lessigiana**.

Myrica Lessigii Lx. = **Artocarpus Lessigiana**.

Myrica lignitum (Ung.) Sap. Étud.: Ann. sci. nat. Bot., 5th ser.,
vol. iv, p. 102, pl. 5, f. 10, 1866.

Dryandroides lignitum (Ung.) Ett. Lesquereux, Proc. U. S. Nat. Mus., vol.
x, p. 41, 1887.

—: Deer Creek coal field, Arizona.

Myrica longa (Heer.) Lx. Fl. Dak. Gr., p. 67, pl. iii, f. 1-6, 1892.

Proteoides longus Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 110, pl. xxxi, f. 4, 5;
xxix, f. 8b, 1874; Du., Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. ii, f.
8, 1882 [1883].

Dakota group: Kansas; Fork of Peace River, Northwest Territory.

Myrica Ludwigii Schimp. Pal. Vég., vol. ii, p. 545, 1872; Lx., Bull.
U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876]; Ann.
Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876]; Tert.
Fl., p. 133, pl. lxxv, f. 9, 1878.

Green River group: Mouth of White River.

Myrica Newberryana Hollick in Newby. Fl. Amboy Clays, p. 63,
pl. xliii, f. 5, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

Myrica nigricans Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.
1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 132, pl. xvii, f. 9-12, 1878.

Green River group: Green River, Wyoming.

- Myrica obliqua** Kn. in Lx. Fl. Dak. Gr., p. 68, pl. xlv, f. 16, 1892.
Dakota group: Kansas.
- Myrica obscura** Lx. Cret. and Tert. Fl., p. 145, pl. xxxii, f. 8-10, 1883.
Green River group: Florissant, Colorado.
- Myrica obtusa** Lx. Cret. Fl., p. 63, pl. xxix, f. 10, 1874.
Dakota group: Kansas.
- Myrica partita** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 134, pl. xvii, f. 14, 1878.
Green River group: Elko Station, Nevada.
- Myrica (Comptonia) parvula** Heer. Fl. Foss. Arct., vol. vii, p. 20, pl. lv, f. 1-3, 1883; Newby., Fl. Amboy Clays, p. 63, pl. xix, f. 6, 1895 [1896].
Amboy clay: Sayreville, New Jersey.
- Myrica polymorpha** Schimp., Études, ii, p. 220, 1868; Lx. Cret. and Tert. Fl., p. 146, pl. xxv, f. 1, 2, 1883.
Green River group: Florissant, Colorado.
- Myrica (Comptonia) premissa** (Lx.) Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 222, 1894.
Comptonia premissa Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 13, 1882 [1883].
Eocene?: Unga Island, Alaska.
- Myrica raritanensis** Hollick In Newby. Fl. Amboy Clays, p. 65, pl. xlii, f. 34, 1895 [1896].
Amboy clay: No location.
- Myrica rigida** Lx. Cret. and Tert. Fl., p. 145, pl. xxv, f. 3, 4, 1883.
Green River group: Florissant, Colorado.
- Myrica Saportana** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876]. [Not afterwards mentioned.]
——: Middle Park, Colorado.
- Myrica salicina** Ung. Gen. et Sp. Pl. Foss., p. 396, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872].
——: Green River, Wyoming.
- Myrica Schimperii** Lx. Fl. Dak. Gr., p. 66, pl. ii, f. 12, 1892.
Dakota group: Kansas.
- Myrica Scottii** Lx. Cret. and Tert. Fl., p. 147, pl. xxxii, f. 17, 18, 1883.
Green River group: Florissant, Colorado.
- Myricæ ? semina** Lx. Cret. Fl., p. 63, pl. xxvii, f. 4, 4a, 1874.
Dakota group: Decatur, Nebraska.
- Myrica Sternbergii** Lx. Cret. and Tert. Fl., p. 35, 1883.
Dakota group: Kansas.
- Myrica Studeri ?** Heer. Fl. Tert. Helv., vol. ii, p. 36, pl. lxx, f. 21-24, 1856; Lx., Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.
Eocene?: White River, Dakota.
- Myrica Torreyi** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1872 [1873]; Tert. Fl., p. 129, pl. xvi, f. 3-10, 1878.
Laramie group: Black Buttes, Wyoming.
Montana formation: Point of Rocks, Wyoming.

Myrica Torreyi minor Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874].

——: Sand Creek, Colorado.

Myrica ? trifoliata Newby. Undistributed plates, xiv, f. 2.

Dakota group: Whetstone Creek, New Mexico.

Myrica undulata (Heer) Schimp. Pal. Vég., ii, p. 556, 1872; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 131, pl. xvii, f. 6-8, 1878.

Dryandroides undulata Heer. Fl. Tert. Helv., vol. iii, p. 188, 1859.

Green River group: Elko Station, Nevada.

Myrica Ungerii Heer. Fl. Tert. Helv., vol. ii, p. 35, pl. lxx, f. 7, 8, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 27, 1888.

Miocene: Spanish Peak, California.

Myrica vindobonensis (Ett.) Heer. Fl. Foss. Alask., p. 27, pl. iii, f. 4, 5, 1869.

Dryandra vindobonensis Ett. Tert. Fl. v. Wien., p. 18, pl. iii, f. 6, 1851.

Eocene?: Neulutschik, Alaska.

Myrica Zachariensis Sap. Études, i, pt. 2: Ann. d. sci. nat. Bot., 4th ser., vol. xix, p. 201 [47], pl. v, f. 1, 1863; Lx., Cret. and Tert. Fl., p. 146, pl. xxv, f. 1, 2; pl. xlva, f. 6-9, 1883.

Green River group: Florissant, Colorado; Alkali Station, Wyoming.

Myrica sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: South Amboy, New Jersey.

MYRICÆPHYLLUM Fontaine. Potomac Fl., p. 315, 1889.

Myricæphyllum dentatum Font. Potomac Fl., p. 316, pl. clvi, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

MYRSINE Linnaeus. Syst., ed. i, 1735.

Myrsine borealis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 81, pl. xxiv, f. 7b, 8; xxvii, f. 1b; xlv, f. 5a; xlvi, f. 19, 20, 1882; Newby., Fl. Amboy Clays, p. 122, pl. xxiv, f. 4-6, 1895 [1896].

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

Myrsine crassa Lx. Fl. Dak. Gr., p. 114, pl. lii, f. 2, 3, 1892.

Dakota group: Kansas.

Myrsine elongata Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. clxxvii, f. 2, 1894; Newby., Fl. Amboy Clays, p. 123, pl. xxii, f. 1-3, 1895 [1896].

Cretaceous: Lloyds Neck, Long Island.

Amboy clay: South Amboy, New Jersey.

Myrsine latifolia Lx. Cret. and Tert. Fl., p. 173, pl. xxxviii, f. 16, 1883.

Green River group: Florissant, Colorado.

Myrsine oblongata Hollick in Newby. Fl. Amboy Clays, p. 122, xlii, f. 15, 1895 [1896].

Amboy clay: Locality unknown.

Myrsine sp., Hollick in Ries. School of Mines Quart., vol. xv, no. 4, p. 354, 1894.

Cretaceous: Little Neck, Northfield Bay, Long Island.

Myrsinites ? Gaudini Lx. Fl. Dak. Gr., p. 115, pl. lii, f. 4, 1892.

Dakota group: Kansas.

MYRTOPHYLLUM Heer. Neue Denkschr. Schw. Ges., vol. xxiii, mem. 2, p. 22, 1869.

Myrtophyllum Geinitzi Heer = *Eucalyptus* Geinitzi.

Myrtophyllum Warderi Lx. Fl. Dak. Gr., p. 136, pl. liii, f. 10, 1892.

Dakota group, Kansas.

MYRTUS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Myrtus oregonensis Lx. Cret. and Tert. Fl., p. 254, pl. lviii, f. 10, 1883.

Miocene: Corral Hollow, California.

NAGEIOPSIS Fontaine. Potomac Fl., p. 194, 1889.

Nageiopsis acuminata Font. Potomac Fl., p. 201, pl. lxxxv, f. 11, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Nageiopsis angustifolia Font. Potomac Fl., p. 202, pl. lxxxvi, f. 8, 9; lxxxvii, f. 2-6; lxxxviii, f. 1, 3, 4, 6-8; lxxxix, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, near Brooke, and Fredericksburg, etc., Virginia.

Nageiopsis crassicaulis Font. Potomac Fl., p. 198, pl. lxxix, f. 2-6; lxxxii, f. 1; lxxxiv, f. 3, 9, 11, 1889.

Potomac formation: Near Potomac Run, Fredericksburg, Kankeys, near Brooke, and Dutch Gap Canal, Virginia.

Nageiopsis decrescens Font. Potomac Fl., p. 199, pl. lxxvii, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

Nageiopsis heterophylla Font. Potomac Fl., p. 201, pl. lxxxiv, f. 4; lxxxvi, f. 6, 7; lxxxviii, f. 2, 5, 1889.

Potomac formation: Fredericksburg, and near Dutch Gap Canal, Virginia.

Nageiopsis inaequilateralis Font. Potomac Fl., p. 200, pl. lxxxv, f. 6, 1889.

Potomac formation: Kankeys.

Nageiopsis latifolia Font. Potomac Fl., p. 198, pl. lxxxii, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, and near Potomac Run, Virginia.

Nageiopsis longifolia Font. Potomac Fl., p. 195, pl. lxxv, f. 1; lxxvi, f. 2-6; lxxvii, f. 1, 2; lxxviii, f. 1-5; lxxxix, f. 7; lxxxv, f. 1, 2, 8, 9, 1889.

Knoxville beds: Tehama County, California.

Potomac formation: Fredericksburg, Kankeys, near Telegraph Station, near Brooke, Deep Bottom, and Dutch Gap Canal, Virginia.

Nageiopsis microphylla Font. Potomac Fl., p. 201, pl. lxxxiv, f. 6; lxxxv, f. 14; lxxxvi, f. 1-3, 5, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Dutch Gap Canal, Virginia.

Nageiopsis obtusifolia Font. Potomac Fl., p. 200, pl. lxxxv, f. 7, 1889.

Potomac formation: Near Potomac Run, Virginia.

Nageiopsis ovata Font. Potomac Fl., p. 199, pl. lxxvii, f. 4; lxxx, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Nageiopsis recurvata Font. Potomac Fl., p. 197, pl. lxxv, f. 2; lxxix, f. 4; lxxx, f. 3, 1889.

Potomac formation: Fredericksburg, and Dutch Gap Canal, Virginia.

Nageiopsis subfalcata Font. Potomac Fl., p. 203, pl. clxviii, f. 4, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Nageiopsis zamoides Font. Potomac Fl., p. 196, pl. lxxix, f. 1, 3; lxxx, f. 1, 2, 4, lxxxi, f. 1-6, 1889.

Potomac formation: Fredericksburg, and Dutch Gap Canal, Virginia.

NAJADOPSIS Heer. Fl. Tert. Helv., vol. i, p. 104, 1855.

Najadopsis rugulosa Lx. Cret. and Tert. Fl., p. 142, pl. xxiii, f. 7, 1883.

Green River group: Florissant, Colorado.

NEGUNDOIDES Lesquereux. Am. Journ. Sci., vol. xlvi, p. 101, 1868.

Negundoides acutifolia Lx. Am. Journ. Sci., vol. xlvi, p. 101, 1868; Cret. Fl., p. 97, pl. xxi, f. 5, 1878.

Dakota group: Lancaster, Nebraska.

NEGUNDO Moench. Mett., p. 334, 1794.

Negundo triloba Newby. Later Extinct Floras, p. 57, 1868.

Fort Union group: Fort Union, North Dakota.

NELUMBIIUM Jussieu. Gen., p. 68, 1789.

Nelumbium Lakesii Lx. = *Nelumbium Lakesianum*.

Nelumbium Lakesianum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1873 [1874].

Nelumbium Lakesii Lx. Tert. Fl., p. 252, pl. xlvi, f. 1, 2, 1878.

Denver group: Golden and Sedalia, Colorado.

Nelumbium pygmæum Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 87, f. (in text) 22, 1890.

Eocene?: Similkameen River, British Columbia.

Nelumbium saskatchuense Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Belly River series?: Canada [exact location not given].

Nelumbium tenuifolium Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1873 [1874]; Tert. Fl., p. 253, pl. xlvi, f. 3, 1878.

Laramie group: Sand Creek, Colorado.

Nelumbium sp., James = *Cycadeoidea mirabilis*.

NELUMBO Adanson. Fam. Pl., vol. ii, p. 76, 1763.

Nelumbo Dawsoni Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 309, 1894.

Brasenia antiqua * Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 15, f. (in text), 1885 [1886].

[* *Brasenia antiqua* Dn., 1886, preoccupied by *B. antiqua* Newby., 1883.]

Belly River series: Medicine Hat.

Nelumbo laramiensis Hollick. Bull. Torr. Bot. Club, vol. xxi, no. 7, p. 307, fig. in text, 1894.

Laramie group: Florence, Colorado.

Neuropteris angulata Newby. = *Trapa microphylla*?

Neuropteris castor Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 14, 14a, 1882 [1883].

Upper Cretaceous: Vancouver Island.

Neuropteris civica Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 141, pl. iv, f. 2, 1895-96.

Eocene: Burrards Inlet, Vancouver, British Columbia.

NILSONIA Brongniart. Ann. d. Sci. Nat., vol. iv, p. 218, 1825.

Nilsonia lata Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 15 bis, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

NÖGGERATHIOPSIS Feistmantel. Foss. Fl. Gondwana Syst.: Mem. Geol. Surv. India, ser. xii, vol. iii, pt. 1, p. 23, 1879.

Nöggerathiopsis Robinsi Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 7, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

NORDENSKIÖLDIA Heer. Mioc. Fl. and Fauna Spitzb.: Kongl. Svenska Vetensk.-Acad. Handl., vol. viii, no. 7 (Fl. Foss. Arct., vol. ii, abt. iii), p. 65, 1870.

Nordenskiöldia borealis Heer. Fl. Foss. Arct., vol. ii, abt. iii, p. 65, pl. vii, f. 1-13, 1870; Lx., Fl. Dak. Gr., p. 219, pl. xlv, f. 6, 1892; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 71, pl. x, f. 6, 1889 [1890].

Dakota group: Kansas.

Eocene?: Mackenzie River, British Columbia.

Nymphæa? sp. Lx. = *Castalia* sp.

NYSSA Gronovius ex Linnæus. Syst., ed. i, 1735.

Nyssa arctica Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 477, pl. xliii, f. 12c; pl. i, f. 5-7, 1869; Lx., Proc. U. S. Nat. Mus., vol. v, p. 447, 1882 [1883].

Eocene?: Unga Island, Alaska.

Nyssa Buddiana Ward. Bull. U. S. Geol. Surv., no. 37, p. 53, pl. xxv, f. 4, 1887.

Laramie group: Hodges Pass, Wyoming.

Nyssa caroliniana Poir. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Nyssa complanata Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 153, 1861.

——: Brandon, Vermont.

Nyssa europæa Ung. Syn. Pl. Foss., p. 228, 1845; Lx., Bull. Mus. Comp. Zool., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

Nyssa lanceolata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]; Tert. Fl., p. 245, pl. xxxv, f. 6 [non f. 5], 1876.

Denver group: Golden, Colorado?

Laramie group: White Oaks, New Mexico.

Nyssa lanceolata Lx. [Tert. Fl., pl. xxxv, f. 5 (non f. 6)]=*Juglans rugosa*.

Nyssa lævigata Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 151, 1861.

——: Brandon, Vermont.

Nyssa microcarpa Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 154, 1861.

——: Brandon, Vermont.

Nyssa? racemosa nom. nov.

Sabalites? fructifer Lx. Ex. p. Tert. Fl. p. 114, pl. xi, f. 3a [non f. 3], 1878.

Denver group: Golden, Colorado.

Nyssa Snowiana Lx. Fl. Dak. Gr., p. 126, pl. lii, f. 11, 1892.

Dakota group: Kansas.

Nyssa uniflora Walt. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Nyssa vetusta Newby. Later Extinct Floras, p. 11, 1868.

Dakota group: Blackbird Hill, Nebraska.

OLEA Linnæus. Syst., ed. i, 1735.

Olea præmissa Lx. Cret. and Tert. Fl., p. 168, pl. xxxiii, f. 1, 1883.

Green River group: Florissant, Colorado.

OLEANDRA Cavanilles. Prael. n. 623, 1801.

Oleandra arctica Heer. Fl. Foss. Arct., vol. iii, p. 38, pl. xii, f. 3-11, 1874; Newby., Am. Journ. Sci., vol. xli, p. 201, pl. xiv, f. 9, 1891.

Kootanie: Great Falls, Montana.

ONOCLEA Linnæus. Amoen. ac., 1751.

Onoclea fecunda (Lx.) n. comb.

Caulinites fecunda Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1872 [1873]; Tert. Fl., p. 101, pl. xiv, f. 1-3, 1878.

Laramie group: Erie, Colorado.

Onoclea sensibilis Newby. Later Extinct Floras, p. 39, 1868; Ills., Cret. and Tert. Fl., pl. viii, f. 1; ix, f. 1-5, 1878.

Fort Union group: Fort Union, North Dakota; Porcupine Creek; North Saskatchewan.

ONYCHIOPSIS Yokoyama. Journ. Col. Sci. Japan, vol. iii, p. 26, 1890.

Onychiopsis Mantelli (Brongn.) Seward. Wealden Fl., p. 41, 1894.
Sphenopteris Mantelli Brongn. Prod. Hist. Vég. Foss., p. 50, 1828; Hist. Vég. Foss., p. 170, 1828; Font., Potomac Fl., p. 91, pl. 1, f. 1, 2, 1889.
 Potomac formation: Baltimore, Maryland.

OPEGRAPHIA Persoon in Usteri n. Ann., I., p. 23, 1794.

Opegrapha antiqua Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 390, 1872 [1873]; Tert. Fl., p. 36, pl. i, f. 1-1c, 1878.
 Laramie group: Black Buttes, Wyoming.

OPHIOGLOSSUM (Tournefort) Linnaeus. Gen. Pl., p. 332, 1737.

Ophioglossum Alleni Lx. = *Tmesipteris Alleni*.

Ophioglossum granulatum Heer. Fl. Foss. Arct., vol. vii, p. 8, pl. lvii, f. 8, 9, 1883; Fl. Amboy Clays, p. 43, pl. ix, f. 11-13, 1895 [1896].
 Amboy clay: No locality given.

OREODAPHNE Nees and Martius. Ex Nees in Linnæa, vol. viii, p. 39, 1833.

Oreodaphne cretacea Lx. Cret. Fl., p. 84, pl. xxx, f. 5, 1874.
 Dakota group: Kansas.

Oreodaphne Heerii Gaud. Neue Denkschr. Schw. Gesel., vol. xvi, p. 35, 1858; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 30, 1888.
 Eocene: Lassen County, California.

Oreodaphne lith(s)æformis Lx. Proc. U. S. Nat. Mus., vol. xi, p. 30, pl. xiv, f. 4, 1888.
 Eocene?: Lassen County, California.

OREODOXITES Göppert. Foss. Fl. d. Perm. Form., p. 146, 1864.

Oreodoxites plicatus Lx. Cret. and Tert. Fl., p. 122, pl. xviii, f. 1-4, 1883.

Denver group: Golden, Colorado.

ORYZOPSIS Michaux. Fl. Bor. Am., vol. i, p. 51, 1803.

Oryzopsis asperifolia Mx. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 331, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

OSMUNDA Linnaeus. Gen. Pl., p. 322, 1737.

Osmunda affinis Lx. Tert. Fl., p. 60, pl. iv, f. 1, 1878.

Pteris affinis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1873 [1874].

Pteris anceps Lx. Ann. Rept., op. cit., p. 376, 1872 [1873].

Denver group: Golden, Colorado.

Osmunda dicksonioides Font. Potomac Fl., p. 146, pl. xli, f. 5; lviii, f. 9; lix, f. 1, 4, 8, 9, 11; lx, f. 2, 4, 5, 9; lxi, f. 1, 2, 1889.

Potomac formation: Near Potomac Run, Virginia.

Kootanie: Great Falls, Montana.

Knoxville beds: Tehama County, California.

Osmunda dicksonioides latipennis Font. Potomac Fl., p. 147, pl. lx, f. 1, 3; lxi, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

Osmunda Doroschkiana Göpp. Abhandl. d. Schles. Gesel. f. Vaterl.-Cult., pt. ii, p. 203, 1861.

Osmunda Torelli Heer. Fl. Foss. Arct., vol. v, abt. iii, p. 19, pl. i, f. 4, 1878.

Lx., Proc. U. S. Nat. Mus., vol. v, p. 444, 1882 [1883].

Hemitelites Torelli Heer. Op. cit., vol. ii, abt. iv, p. 462, 1869.

Pecopteris Torrellii Heer. Op. cit., vol. i, p. 88, pl. i, f. 15, 1868.

Eocene?: Unga Island, Alaska.

Osmunda major Lx. = *Asplenium subsimplex*.

Osmunda Obergiana Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 98, pl. xxvi, f. 9-9b; xxxii, f. 7a, 1874; Ward, 15th Ann. Rept. U. S. Geol. Surv., p. 390, 1895.

Potomac formation: ———?

Osmunda sphenopteroides Font. Potomac Fl., p. 145, pl. xxv, f. 13, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Osmunda Torelli Heer = *Osmunda Doroschkiana*.

OSTRYA Scopoli. Fl. Carn., p. 414, 1760.

Ostrya betuloides Lx. Cret. and Tert. Fl., p. 151, 1883.

Green River group: Florissant, Colorado.

Ostrya Walkeri? Heer. Vierteljahrsschrift d. Naturf. Gesells. Zürich, vol. xi, p. 276, 1866; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.

Pleistocene?: Wytheville, Virginia.

Ostrya virginica (Mill.) B. S. P. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

OXYCOCCUS Adanson. Pl. Fam., vol. ii, pl. 164, 1763.

Oxycoccus palustris Pers. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 72, 1896.

Pleistocene: Scarboro Heights, Ontario.

OTTELIA Pers. Syn., vol. i, p. 400, 1805.

Ottelia americana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1874 [1876]; Tert. Fl., p. 98, pl. lxi, f. 8, 1878.

Montana formation: Point of Rocks, Wyoming.

PAGIOPHYLLUM Heer. Contr. Fl. Foss. du Portugal, p. 11, 1881.

Pagiophyllum dubium Font. Proc. U. S. Nat. Mus., vol. xvi, p. 271, pl. xxxix, f. 2-11, 1893.

Trinity division: Glenrose, Texas.

Pagiophyllum sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 14, 1892.

Kootanie: Anthracite? British Columbia.

PALÆANTHUS Newberry. Bull. Torr. Bot. Club, vol. xiii, p. 37, 1886.
Palæanthus (Williamsonia) problematicus Newby. Fl. Amboy
Clays, p. 125, pl. xxxv, f. 1-9, 1895 [1896].

Williamsonia problematica (Newby.) Ward. 15th Ann. Rept. U. S. Geol.
Surv., p. 382, 1895.

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

PALÆOCASSIA Ettingshausen. Sitzb. Wien. Akad., vol. lv, abt. i,
p. 261, 1867.

Palæocassia laurinea Lx. Fl. Dak. Gr., p. 147, pl. lxiv, f. 12, 1892.
Dakota group: Kansas.

PALEOHILLIA Knowlton. Bull. Torr. Bot. Club., vol. xxii, p. 387,
1895.

Paleohillia arkansana Kn. Bull. Torr. Club, vol. xxii, p. 387, f. (in
text) 1-3, 1895.

Trinity division: Six miles northwest of Center Point, Howard
County, Arkansas.

PALIURUS Tournefort. Ex. Miller Gard. Diet., ed. vi. 1752.

Paliurus affinis ? Heer. Fl. Foss. Arct., vol. vii, p. 42, 1883; Hollick,
Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. ii, f. 12, 14, 18, 19; pl. iii, f. 7,
1892.

Cretaceous: Staten Island.

Paliurus anceps Lx. Fl. Dak. Gr., p. 166, pl. xxxv, f. 4, 1892.
Dakota group: Kansas.

Paliurus Colombi Heer. Fl. Foss. Arct., vol. i, p. 122, pl. xvii, f. 2d;
pl. xix, f. 2-4, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv.
Terr., p. 288, 1871 [1872]; Tert. Fl., p. 273, pl. I, f. 13-17, 1878.

Fort Union group: Yellowstone River, Montana.

Denver group?: Creston, Wyoming.

Laramie group?: Carbon, Wyoming.

Miocene: John Day Valley, Oregon.

Canadian upper Laramie: Great Valley, British Columbia.

Paliurus coloradensis Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 55,
1888.

Denver group: Golden, Colorado.

Paliurus cretaceus Lx. Fl. Dak. Gr., p. 165, pl. xxxv, f. 3, 1892.
Dakota group: Kansas.

Paliurus florissant Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.
Terr., p. 416, 1873 [1874]; Tert. Fl., p. 274, pl. I, f. 18, 1878.

Green River group: Florissant, Colorado.

Paliurus intigrifolius Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 57,
pl. clxxvii, f. 5, 8, 12, 1894.

Clay marl [Upper Cretaceous]: Cliffwood, New Jersey?

Cretaceous: Lloyds Neck, Glen Cove, and Oak Neck, Long Island.

Paliurus membranaceus Lx. Am. Journ. Sci., vol. xlv, p. 101, 1868; Cret. Fl., p. 108, pl. xx, f. 6, 1874; Fl. Dak. Gr., p. 167, pl. xxxv, f. 5, 1892.

Dakota group: Decatur, Nebraska; Kansas.

Cretaceous: Marthas Vineyard, Massachusetts.

Paliurus montanus Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River.

Paliurus neillii Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. xi, f. 44, 45, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Paliurus obovatus Lx. Fl. Dak. Gr., p. 165, pl. xxxv, f. 6, 1892.

Dakota group: Kansas.

Paliurus ovalis Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 4, 8, 1885 [1886]; Newby., Fl. Amboy Clays, p. 107, pl. xxiii, f. 8, 9, 1895 [1896]; Lx., Fl. Dak. Gr., p. 166, p. xxxv, f. 7, 1892.

Mill Creek series: Mill Creek.

Amboy clay: New Jersey.

Dakota Group: Kansas.

Paliurus orbiculatus Sap. Études iii, Ann. Sci. Nat., 5th ser., vol. ix, p. 182, pl. vii, f. 6, 1867; Lx., Cret. and Tert. Fl., p. 188, pl. xxxviii, f. 12, 1883.

Green River group: Florissant, Colorado.

Paliurus Pealei Ward. Bull. U. S. Geol. Surv., no. 37, p. 76, pl. xxxiii, f. 12-14, 1887.

Fort Union group?: Little Missouri River, Montana.

Paliurus pulcherrimus Ward. Bull. U. S. Geol. Surv., no. 37, p. 75, pl. xxxiii, f. 11, 1887.

Laramie group: Carbon, Wyoming.

Paliurus zizyphoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873]; Tert. Fl., p. 274, pl. li, f. 1-6, 1878.

Denver group: Golden, Colorado.

Laramie group: Erie, and Sand Creek, Colorado; Black Buttes, Wyoming.

Palmacites goldianus Lx.=*Geonomites goldianus*.

PALMOCARPON Lesquereux. Tert., Fl., p. 119, 1878.

Palmocarpum commune Lx.=*Palmocarpum palmarum*.

Palmocarpum compositum Lx. Tert. Fl., p. 119, pl. xi, f. 4, 1878.

Carpolithes compositus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 16, 1871 [1872].

Laramie group: Placer Mountain, New Mexico.

Palmocarpum corrugatum Lx. Tert. Fl., p. 121, pl. xi, f. 10, 11, 1878.

Denver group: Golden, Colorado.

Palmocarpum? globosum Lx. Cret. and Tert. Fl., p. 144, pl. xxiv, f. 3, 1883.

Green River group: Florissant, Colorado.

Palmocarpon lineatum Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

Palmocarpon mexicanum Lx. Tert. Fl., p. 119, pl. xi, f. 5, 1878.

Carpolithes mexicanus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 17, 1871 [1872].

Laramie group: Placer Mountain, New Mexico.

Palmocarpon palmarum (Lx.) n. comb.

Palmocarpon commune Lx. Tert. Fl. p. 119, pl. xiii, f. 4-7, 1878.

Carpolithes palmarum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 13, 1871 [1872].

Denver group: Golden, Colorado (very common).

Laramie group: Raton Mountains, New Mexico; Evanston and Black Buttes, Wyoming; Morrison and Golden, Colorado.

Palmocarpon subcylindricum Lx. Tert. Fl., p. 121, pl. xi, f. 12, 1878.

Denver group: Golden, Colorado.

Palmocarpon truncatum Lx. Tert. Fl., p. 120, pl. xi, f. 6-9, 1878.

——: Golden, Colorado.

PALMOXYLON Schenk. Engler's bot. Jahrb., vol. iii, p. 486, 1882.

Palmoxylon cellulolum Kn. Proc. U. S. Nat. Mus., vol. xi, p. 90, pl. xxx, f. 2, 1888.

——: Rapides Parish, Louisiana.

Palmoxylon Quenstedti Felix. Foss. Hölz. Westindiens, p. 25, pl.

iv, f. 4, 1883; Kn., Proc. U. S. Nat. Mus., vol. xi, p. 90, pl. iv, f. 4, 1888.

——: Rapides Parish, Louisiana.

PARROTIA C. A. Meyer. Verz. Pfl. Canc., p. 46, 1831.

Parrotia Canfieldi Lx. Fl. Dak. Gr., p. 141, pl. xxx, f. 6, 1892.

Dakota group: Kansas.

Parrotia grandidentata Lx. Fl. Dak. Gr., p. 140, pl. xxxix, f. 2-4, 1892.

Dakota group: Kansas.

Parrotia? Winchelli Lx. Fl. Dak. Gr., p. 140, pl. xxix, f. 5, 6, 1892.

Dakota group: Minnesota; Kansas.

PASSIFLORA Linnæus. Syst., ed. i, 1735.

Passiflora antiqua Newby. Fl. Amboy Clays, p. 109, pl. xxiii, f. 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

PECOPTERIS Brongniart. Hist. Vég. Foss., p. 267, 1828.

Pecopteris angustipennis Font. Potomac Fl., p. 87, pl. xxi, f. 10, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Pecopteris brevipennis Font. Potomac Fl., p. 86, pl. xxi, f. 1-3, 1889.

Potomac formation: Near Potomac Run, and near Dutch Gap Canal, Virginia.

Pecopteris Browniana Dunk. = Cladophlebis Browniana.

Pecopteris constricta Font. Potomac Fl., p. 86, pl. xx, f. 1, 2, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

Pecopteris Dunkeri Schimp. = *Cladophlebis Dunkeri*.

Pecopteris microdonta Font. Potomac Fl., p. 85, pl. xix, f. 8; xx, f. 5, 11, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Pecopteris montanensis Font. Proc. U. S. Nat. Mus., vol. xv, p. 492, pl. lxxxiii, f. 1, 1a, 1892.

Kootanie: Great Falls, Montana.

Pecopteris nebraskana ? Heer = *Cyathites nebraskana*.

Pecopteris ovatodentata Font. Potomac Fl., p. 85, pl. xv, f. 8; xxii, f. 12; xxii, f. 1, 1889.

——: Fredericksburg and Dutch Gap Canal, Virginia.

Pecopteris pachyphylla Font. Potomac Fl., p. 88, pl. xxvi, f. 4, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Pecopteris (Phegopteris) sepulta Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Eocene: Green River, Wyoming.

Pecopteris (Pteris?) socialis Heer. Fl. Foss. Aret., vol. vi, pt. ii, p. 34, pl. vii, f. 4, 1882; Font., Potomac Fl., p. 87, pl. xxi, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

Pecopteris strictinervis Font. Potomac Fl., p. 84, pl. xiii, f. 6-8; xix, f. 9; xx, f. 3; xxii, f. 13; clxx, f. 5, 6, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

Knoxville beds: Tehama County, California.

Pecopteris Torelli Heer = *Osmunda Doroschkiana*.

Pecopteris virginiensis Font. Potomac Fl., p. 82, pl. viii, f. 1-7; ix, f. 1-6; xxiv, f. 2; clxix, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, Fredericksburg, Potomac Run, near Brocke, and near Telegraph Station, Virginia; Baltimore, Maryland.

Pecopteris sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 70, 1873.

Cretaceous: Hornby Island, British Columbia.

Pecopteris sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

PERSEA Gartner. Fr. and Sem., vol. iii, p. 222, 1805.

Persea Borbonia (L.) Spreng. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Laurus carolinensis Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 426, pl. K, f. 10, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Miocene?: Bridgeton, New Jersey.

Persea brossiana Lx. Ann. Rept., op. cit., p. 407, 1873 [1874].

Laurus brossiana Lx. Tert. Fl., p. 216, pl. xxxvi, f. 9, 1878.

Denver beds: Mount Bross, Middle Park, Colorado.

Persea Dilleri Lx. Proc. U. S. Nat. Mus., vol. xi, p. 27, pl. xiii, f. 2-4, 1888.

Miocene: Shasta County, California.

Persea Hayana Lx. Fl. Dak. Gr., p. 103, pl. xvi, f. 6, 1892.

Dakota group: Kansas.

Persea lancifolia Lx. Trans. Am. Phil. Soc., vol. xiii, p. 419, pl. xix, f. 3, 4, 1869.

Eolignitic: Mississippi.

Persea Leconteana Lx. Cret. Fl., p. 75, pl. xxviii, f. 1, 1874.

Sassafras Leconteanum Lx. Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 1, 1869.

Quercus Benzoin? Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

Dakota group: Fort Harker, Kansas.

———?: Nanaimo, Vancouver Island.

Persea nebrascensis Lx. = *Laurus nebrascensis*.

Persea pseudo-carolinensis Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 19, pl. vii, f. 1, 2, 1878.

Miocene: Table Mountain and Corral Hollow, California.

Persea punctulata Lx. Proc. U. S. Nat. Mus., vol. xi, p. 26, pl. xiv, f. 1, 1888.

Miocene?: Corral Hollow, California.

Persea Schimperii Lx. Fl. Dak. Gr., p. 103, pl. xvi, f. 5, 1892.

Dakota group: Kansas.

Persea speciosa? Heer. Fl. Tert. Helv., vol. ii, p. 81, pl. xc, f. 11, 12; c, f. 18, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 36, 1888.

———?: Selma, Texas.

Persea Sternbergii Lx. Cret. Fl., p. 76, pl. vii, f. 1, 1874.

Ficus Sternbergii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

Dakota group: Fort Harker, Kansas.

PERSEOXYLON Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, vol. viii, p. 153 [11], 1887.

Perseoxydon aromaticum Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, p. 157, 1887; Zeitschr. d. Deutschen geol. Gesell. Jahr. 1896, p. 254, 1896,

Laurinoxydon aromaticum Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, vol. vii, p. 27, pl. i, f. 7; ii, f. 7, 9, 1884.

Eocene: Yanceys, Yellowstone National Park; Hungary.

PERSOONIA Swartz. In Trans. Linn. Soc., vol. iv, p. 215, 1798.

Persoonia Lesquereuxii Kn. in Lx. Fl. Dak. Gr., p. 89, pl. xx, f. 10-12, 1892; Newby., Fl. Amboy Clays, p. 71, pl. xlii, f. 16, 1895 [1896].

Dakota group: Kansas.

Amboy clay: No location.

Persoonia oviformis Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Bellingham Bay.

Persoonia spatulata Hollick. in Newby. Fl. Amboy Clays, p. 71, pl. xlii, f. 14, 1895 [1896].

Amboy clay: No location.

PHASEOLITES Unger. Synop. Pl. Foss., p. 244, 1845.

Phaseolites formus Lx. Fl. Dak. Gr., p. 147, pl. lv, f. 5, 6, 12, 1892.

Dakota group: Kansas.

Phaseolites juglandinus? Heer. Lesquereux, Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876].

——: Green River near mouth of White River.

PHEGopteris Presl. Pterid., p. 179, 1836.

Phegopteris Grothiana Heer. Fl. Foss. Arct., vol. vii, p. 3, pl. xlviii, f. 12, 13, 1883; Fl. Amboy Clays, p. 42, pl. iii, f. 4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

PHRAGMITES Trinius. Fund. Agrost., p. 134, 1820.

Phragmites alaskana Heer. Fl. Foss. Alask., p. 24, pl. i, f. 12, 1869; Lx., Ann. Rept., op. cit., p. 296, 1871 [1872]; Tert. Fl., p. 90, pl. viii, f. 10-12, 1878.

Eocene?: Port Graham, Alaska.

Fort Union group: Montana.

Livingston beds?: Bozeman coal field, Montana.

Green River group: Green River, Colorado.

Phragmites cordaiformis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv., p. 26, pl. v, f. 22, 1882 [1883].

Upper Cretaceous: North Saanich and Nanaimo; Baynes Sound, Vancouver.

Phragmites cretaceus Lx. Cret. Fl., p. 55, pl. i, f. 13, 14; pl. xxix, f. 7, 1874; Fl. Dak. Gr., p. 37, pl. ii, f. 8, 1892.

Arundo cretaceus Lx. Am. Journ. Sci., vol. xlvi, p. 92, 1868.

Equisetum nodosum Lx. Cret. and Tert. Fl., p. 25, 1883.

Dakota group: Kansas.

Phragmites oeningensis Al. Br. In Stizenberger, Verstein., p. 75, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 284, 1871, [1872]; Tert. Fl., p. 88, pl. viii, f. 1, 2, 1878.

Miocene: John Day Valley, Oregon.

True Laramie to Upper Miocene or Pliocene.

Phragmites sp., Dn. Rept. on Geol. and Res., near 49th Parallel, Appen. A, p. 329, 1875.

——: Porcupine Creek.

Phragmites sp., Newby. Later Extinct Floras, p. 38, 1868.

Fort Union group: Fort Union, North Dakota.

PHYLLITES Sternberg. Vers., vol. i, fasc. iii, p. 39, 1823.

Phyllites aceroides Heer. Fl. Foss. Arct., vol. i, p. 139, pl. xxiii, f. 5, 1868.

Miocene?: Mackenzie River, British Columbia.

- Phyllites amorphus** Lx. Am. Journ. Sci., vol. xlv, p. 102, 1868; Cret. Fl., p. 113, pl. xxii, f. 3, 4, 1874.
Dakota group: Decatur, Nebraska.
- Phyllites arctica** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 230, pl. ix, f. 10, 11, 1894.
Eocene?: Herendeen Bay, Alaska.
- Phyllites aristolochiæformis** Lx. Fl. Dak. Gr., p. 217, pl. lix, f. 8, 1892.
Dakota group: Kansas.
- Phyllites amissus** Lx. Fl. Dak. Gr., p. 217, pl. lxii, f. 1, 1892.
Dakota group: Kansas.
- Phyllites betulæfolius** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 430, pl. xxiii, f. 2-4, 1869; Cret. Fl., p. 112, pl. xxviii, f. 4-7, 1874.
Dakota group: Kansas and Nebraska.
- Phyllites carneosus** Newby. Later Extinct Floras, p. 75, 1868.
Fort Union group: Fort Union, North Dakota.
- Phyllites celatus** Lx. Fl. Dak. Gr., p. 215, pl. lxi, f. 1, 1892.
Dakota group: Kansas.
- Phyllites cotinus** Lx. = *Liriodendron primævum*.
Phyllites cupanioides Newby. = *Pterospermites cupanioides*.
Phyllites cuspidatus Rossm. Lx. = *Quercus* cf. *cuspidata*.
- Phyllites cyclophylla**[us] (Lx.) Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 11, 1894.
Salvinia cyclophylla Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 408, 1873 [1874]; Tert. Fl., p. 64, pl. v, f. 10, 10a, 1878.
Green River group: Middle Park, Colorado.
- Phyllites durescens** Lx. Fl. Dak. Gr., p. 218, pl. lxi, f. 5; pl. lxii, f. 3, 1892.
Dakota group: Kansas.
- Phyllites ellipticus** Newby. Fl. Amboy Clays, p. 130, pl. xxiv, f. 9, 1895 [1896].
Amboy clay: Woodbridge, New Jersey.
- Phyllites erosus** Lx. Fl. Dak. Gr., p. 216, p. lxi, f. 4, 1892.
Dakota group: Kansas.
- Phyllites flexuosus** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 735, pl. cii, f. 8, 1898.
Payette formation: Near Marsh post-office, Boise County, Idaho.
- Phyllites fraxineus** Lx. Proc. U. S. Nat. Mus., vol. x, p. 46, 1887.
Nomen nudum.
Pleistocene: Bridgeton, New Jersey.
- Phyllites ilicifolius** Lx. Fl. Dak. Gr., p. 213, pl. x, f. 9, 1892.
Dakota group: Kansas.
- Phyllites improbus** Lx. Tert. Fl., p. 107, pl. xiv, f. 18, 1878.
Rhizocaulon gracile Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]. [Non *R. gracile* Sap., 1861.]
Laramie group: Black Buttes, Wyoming.

Phyllites innectens Lx. Fl. Dak. Gr., p. 219, pl. lxxv, f. 6, 1892.

Dakota group: Kansas.

Phyllites juglandiformis Sternb. [1825]=*Hicoria juglandiformis*.

Phyllites Lacoei Lx. Fl. Dak. Gr., p. 213, pl. xlv, f. 6, 1892.

Dakota group: Kansas.

Phyllites laurencianus Lx. Fl. Dak. Gr., p. 215, pl. xlv, f. 5, 1892.

Dakota group: Kansas.

Phyllites mahoniæformis Heer. Neue Denkschr., vol. xxi, p. 10, pl. ii, f. 9, 1865.

——: Burrard Inlet, British Columbia.

Phyllites mimusopsoides Lx. Proc. U. S. Nat. Mus., vol. x, p. 46, 1887. *Nomen nudum*.

Pleistocene: Bridgeton, New Jersey.

Phyllites obcordatus Heer=*Liriodendron primævum*.

Phyllites obscura[us] Hollick in Newby. Fl. Amboy Clays, p. 131, pl. xlii, f. 33, 1895 [1896].

Amboy clay: New Jersey.

Phyllites obtusi-lobatus Heer. Proc. Acad. Nat. Sci., Phila., vol. x, p. 266, 1858.

Dakota group: Kansas?

Phyllites orbicularis Newby. Fl. Amboy Clays, p. 130, pl. xxiv, f. 7, 8, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Phyllites payettensis nom. nov.

Phyllites obscurus * Kn., Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 735, pl. xcix, f. 10, 11, 1898.

[**Phyllites obscurus* Kn., antedated by *P. obscura*. Hollick, 1895.]

Payette formation: Near Marsh post-office, Boise County, Idaho.

Phyllites pachyphyllus Font. Potomac Fl., p. 325, pl., cxlix, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Phyllites perplexus Lx. Fl. Dak. Gr., p. 215, pl. xxxviii, f. 15, 1892.

Dakota group: Kansas.

Phyllites poinsettoides Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 37, pl. i, f. 10, 1892.

Cretaceous: Staten Island.

Phyllites rhoifolius Lx. Am. Journ. Sci., vol. xlvi, p. 101, 1868; Cret. Fl., p. 111, pl. xxii, f. 5, 6, 1874.

Dakota group: Lancaster County, Nebraska.

Phyllites rhomboideus Lx. Cret. Fl., p. 112, pl. vi, f. 7, 1874.

Ficus? rhomboideus Lx. Am. Journ. Sci., vol. xlvi, p. 96, 1868.

Dakota group: Decatur, Nebraska.

Phyllites sapindiformis Lx. Tert. Fl., p. 301, pl. xxix, f. 6, 7, 1878.

Green River group: Green River? Wyoming.

Phyllites Snowii Lx. Fl. Dak. Gr., p. 214, pl. xxxviii, f. 2, 1892.

Dakota group: Kansas.

Phyllites stipulæformis Lx. Fl. Dak. Gr., p. 216, pl. lxi, f. 2, 1892.

Dakota group: Kansas.

Phyllites sulcatus Lx. Am. Journ. Sci., vol. xlv, p. 206, 1868. [Not afterwards employed by Lesquereux.]

Laramie group?: Marshalls, Colorado.

Phyllites truncatus Lx. Trans. Am. Phil. Soc., vol. xiii, p. 423, pl. xvii, f. 9, 1869.

Eolignitic: Mississippi.

Phyllites umbonatus Lx. Am. Journ. Sci., vol. xlvi, p. 102, 1868.

Dakota group: Beatrice, Nebraska.

Phyllites undulatus Newby. Fl. Amboy Clays, p. 131, pl. xxiv, f. 10, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Phyllites vanonæ Heer. Phyll. Crét. d. Nebr., p. 22, pl. i, f. 8, 1866; Lx., Cret. Fl., p. 113, pl. xx, f. 7; pl. xxviii, f. 8, 1874; Fl. Dak. Gr., p. 214, pl. xx, f. 9; pl. xlii, f. 5, 1892.

Dakota group: Decatur, Nebraska; Kansas.

Phyllites venosus Newby. Later Extinct Floras, p. 75, 1868.

Fort Union group: Fort Union, North Dakota.

Canadian upper Laramie: Porcupine Creek, Canada.

Phyllites wascoensis Lx. Proc. U. S. Nat. Mus., vol. xi, p. 22, pl. xv, f. 3, 1888.

Eocene?: Cherry Creek, Oregon.

Phyllites zamiaeformis Lx. Fl. Dak. Gr., p. 28, pl. ii, f. 7, 1891.

Dakota group: Kansas.

Phyllites sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 32, pl. ii, f. 20, 1886 [1887].

Canadian upper Laramie: Great Valley.

Phyllites sp.? Lx. Fl. Dak. Gr., p. 218, pl. lix, f. 7, 1892.

Dakota group: Kansas.

Phyllites sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, 1893 [1894].

Upper Cretaceous: Vancouver Island.

PHYLLOCLADOPSIS Fontaine. Potomac Fl., p. 204, 1889.

Phyllocladopsis heterophylla Font. Potomac Fl., p. 204, pl. lxxxiv, f. 5; clxvii, f. 4, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Phyllocladus subintegrifolius Lx. = *Thinfeldia subintegrifolia*.

PHYSAGENIA Heer. Fl. Tert. Helv., vol. i, p. 109, 1855.

Physagenia Parlatorii Heer. = *Equisetum Parlatorii*.

Physagenia sp., Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 43, 1888.

Denver group: Golden, Colorado.

PICEA Link. Abhandl. Akad. Wiss. Berlin 1827, p. 179, 1827-1830.

Picea alba Link. = *Picea canadensis*.

Picea canadensis (Mill.) B. S. P.

Picea alba Link. Handb., vol. ii, p. 478, 1831; Penhallow, Bull. Geol. Soc. Am., vol. i, p. 333, 1890.

Pleistocene: Bloomington, Illinois.

Picea Mariana (Mill.) B. S. P.

Picea nigra Link. Handb., vol. ii, p. 478, 1831; Penhallow in Dawson, Can. Rec. Sci., vol. v, p. 353, 354, 1895.

Pleistocene: Don Valley, Toronto; Hamilton, Ontario; Leda clay, Montreal; Missinaibi River.

Picea nigra Link = *Picea Mariana*.

Picea sitchensis Carr. Knowlton, Journ. Geol., vol. iii, p. 529, f. (in text) 1, 1895; Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895. Interglacial: Muir Glacier, Alaska.

Pleistocene: Don River, Canada.

PIMELEA Banks and Solander. Ex Gart. Fruct., vol. i, p. 186, 1788.

Pimelea delicatula Lx. Cret. and Tert. Fl., p. 168, pl. xxxiii, f. 15, 16, 1883.

Green River group: Florissant, Colorado.

PINITES Witham. Int. Struct. Foss. Veg., p. 72, 1833.

Pinites palæostrobis Ett. = *Pinus palæostrobis*.

Pinites pannonicus (Ung.) Göpp. Abhandl. d. Schles, Gesell. 1861, heft ii, p. 203, 1861.

Peuce pannonica Ung. Syn. Pl. Foss., p. 208, 1845.

Eocene?: Unga Island, Alaska.

PINUS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Pinus anthraciticus Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 89, f. (in text) 10, 1892 [1893].

Kootanie: Anthracite, British Columbia.

Pinus Armstrongi Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 19, 1868.

Miocene?: Banks Land.

Pinus Bathursti Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 14, 1868.

Miocene?: Bathurst Island.

Pinus Florissanti Lx. Cret. and Tert. Fl., p. 138, pl. xxi, f. 13, 1883.

Green River group: Florissant, Colorado.

Pinus MacClurii Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 16-18; xxxv, f. 1; xxxvi, f. 1-5, 1868; Cramer in Heer's Fl. Foss. Arct., vol. i, p. 170, pl. xxxv, f. 1; xxxvi, f. 1-5, 1868.

Miocene?: Banks Land.

Pinus (Cyclopitus) Nordenskiöldi Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 45, pl. ix, f. 1-6, 1876; Dn., Trans. Roy. Soc. Canada, vol. x, p. 88, f. (in text) 9, 1892 [1893].

Kootanie: Anthracite, British Columbia.

Pinus palæostrobis? (Ett.) Heer. Fl. Tert. Helv., vol. i, p. 56, pl. xxi, f. 6, 1855; Lx., Tert. Fl., p. 83, pl. vii, f. 25, 31, 1878.

Pinites palæostrobis Ett. Tert. Fl. v. Häring in Tirol, p. 35, pl. vi, f. 22-23, 1853.

Pinus polaris Heer. Fl. Foss. Arct., vol. i, p. 157, pl. xxxi, f. 4b, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 410, 1873 [1874].

Green River group: Florissant, Colorado.

Pinus polaris Heer Lx. [1873] = *Pinus palæostrobis*

Pinus Quenstedti Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 13, pl. ii, f. 5, 9; pl. iii, 1869; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875 [1876]; Cret. and Tert. Fl., p. 33, pl. i, f. 3, 4, 1883.

Dakota group: Kansas.

Pinus strobus L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 67, 72, 1896.

Pleistocene: New Brunswick.

Pinus susquaensis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iii, f. 36, 1882 [1883].

Cretaceous: Susqua River, Northwest Territory.

Kootanie: Martin Creek, Coal Creek, and Crows Nest Pass, British Columbia.

Pinus trunculus Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 78, f. (in text) 5, 1890.

—: Tranquille River, British Columbia.

Pinus sp., Font. Proc. U. S. Nat. Mus., vol. xvi, p. 269, pl. xxxvi, f. 11, 1893.

Trinity division: Glenrose, Texas.

Pinus sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. i, f. 13, 19, 20, 22, 1892.

Cretaceous: Staten Island.

Pinus sp., Heer. Fl. Foss. Alask., p. 23, pl. i, f. 11, 1869.

Eocene?: Port Graham, Alaska.

Pinus sp., Lx. Geol. and Nat. Hist. Survey Minn., vol. iii, p. 10, 1893.

Dakota group: New Ulm, Minnesota.

Pinus? sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887.
[Fossil wood.]

Upper Laramie group: Mackenzie River?

Pinus sp.? Newby. Fl. Amboy Clays, p. 47, pl. ix, f. 5-8, 17, 18, 1895 [1896].

Amboy clay: No location.

Pinus sp. Heer. Fl. Foss. Arct., vol. i, p. 136, pl. xxi, f. 9, 1868.

Miocene?: Mackenzie River.

Pinus sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii; p. 722, pl. cxix, f. 3, 1898.

Payette formation: Idaho City, Idaho.

PIPER Linnaeus. Gen., ed. i, p. 333, 1737.

Piper Heerii Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

PISONIA Plumier. Ex L., Gen., ed. i, p. 42, 1737.

Pisonia racemosa Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1873 [1874]; Tert. Fl., p. 209, pl. xxxv, f. 4, 1878.

Laramie group: Black Buttes, Wyoming.

PISTACIA Linnæus. Hort. Cliff, p. 456, 1737.

Pistacia oblanceolata (Lx.) n. comb.

Ficus oblanceolata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 194, pl. xxviii, f. 9-12, 1878.

Laramie group: Erie, Colorado; Black Buttes, Wyoming.

PISTIA Linnæus. Gen., ed. i, p. 275, 1737.

Pistia corrugata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1874 [1876]; Tert. Fl., p. 103, pl. lxi, f. 1, 3, 4, 6, 7, 9-11, 1878.

Montana formation: Point of Rocks, Wyoming.

Belly River series: Medicine Hat.

PITYOXYTON Kraus. In Schimper Pal. Vég., vol. ii, p. 377, 1870.

Pityoxylon fallax Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahr. 1896, p. 254, 1896.

Eocene: Yanceys, Yellowstone National Park.

Pityoxylon Hollicki Kn. In Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 134, figs. [in text] 1, 2, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Pityoxylon inæquale Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahrg. 1886, p. 483, pl. xii, f. 3, 1886.

Eocene?: Danaaku, Alaska.

Pityoxylon Krausei Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahrg. 1886, p. 486, pl. xii, f. 1, 2, 1886.

Fort Union group: Little Missouri, Dakota.

Pityoxylon Pealei Kn. Bull. Torr. Bot. Club, vol. xxiii, p. 251, pl. cclxxi, 1896.

Miocene: Upper Galletin Basin, Montana.

Pityoxylon sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: West of Medicine Hat.

PLANERA Gmelin. Syst., p. 150, 1791.

Planera aquatica (Walt.) Gmel. Syst. Nat., vol. ii, p. 150, 1791; Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Planera Gmelini Mx. Fl. Bor. Am., vol. ii, p. 248, 1803; Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

Miocene?: Bridgeton, New Jersey.

Planera crenata Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Planera dubia Lx. = *Planera Ungerii*.

Planera Gmelini Mx. Lx. = *Planera aquatica*.

Planera Knowltoniana Hollick in Newby. Fl. Amboy Clays, p. 69, pl. xlii, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Planera longifolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 371, 1872 [1873]; Tert. Fl., p. 189, pl. xxvii, f. 4-6, 1878.

Quercus semi-elliptica Göpp. Lx., Ann. Rept., p. 286, 1871 [1872].

Green River group: Elko Station, Nevada; Florissant, Colorado.

Eocene?: North Fork Similkameen River, British Columbia.

Planera longifolia myricæfolia Lx. Cret. and Tert. Fl., p. 161, pl. xxix, f. 15-27, 1883.

Green River group: Florissant, Colorado.

Planera microphylla Newby. Later Extinct Floras, p. 55, 1868.

Fort Union group: Fort Union, North Dakota.

Planera nervosa Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Eocene: Green River, Wyoming.

Planera Unger Ett. Foss. Fl. v. Wien., p. 14, pl. ii, f. 5-18, 1851; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. loc. cit., p. 313, 1874 [1876]; Tert. Fl., p. 190, pl. xxvii, f. 7, 1878.

Planera dubia Lx. Am. Journ. Sci., vol. xxviii, p. 361, 1859.

Planera longifolia? Lx. Ann. Rept., op. cit., p. 371, 1872 [1873].

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene: Port Graham, Alaska; Bellingham Bay?

Planera variabilis Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882, [1883].

Eocene: Green River, Wyoming.

PLATÆANTHUS Newberry. Fl., Amboy Clays, p. 125, 1895 [1896].

Platæanthus (Williamsonia) problematicus Newby. Fl., Amboy Clays, p. 125, pl. xxxv, f. 1-9, 1896.

Amboy clay, New Jersey.

PLATANINIUM Unger. In Endlicher Gen. Pl., suppl. ii, p. 101, 18—. [Not seen.]

Plataninium Haydeni Felix. Zeitschr. d. Deutsch. geol. Gesell., Jahr 1896, p. 251, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

PLATANOPHYLLUM Fontaine. Potomac Fl., p. 316, 1889.

Platanophyllum crassinerve Font. Potomac Fl., p. 316, pl. clviii, f. 5, 1889.

Potomac formation: Deep Bottom, Virginia.

PLATANUS (Tournefort) Linnæus. Hort. Cliff, p. 447, 1737.

Platanus aceroides Göpp. Zeit. Deutsch. Geol., Gesell., vol. iv., p. 492, 1852; Lx., Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1869; Tert. Fl., p. 184, pl. xxv, f. 4-6, 1878.

Fort Union group: Bad Lands, Dakota.

Livingston beds: Bozeman coal field, Montana.

Denver group: Golden, Colorado.

Denver group?: Carbon, Wyoming.

Laramie group: Black Buttes, Wyoming.

Miocene: John Day Valley, Oregon; Mackenzie River.

Platanus aceroides latior Lx. = *Platanus* latior.

Platanus affinis Lx. = *Cissites affinis*.

Platanus affinis ampla Dn. = *Cissites affinis ampla*.

Platanus appendiculata Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 12, pl. iii, f. 1-6; pl. vi, f. 7b, 1878.

Miocene: Chalk Bluffs, California.

Platanus aquehongensis Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. iv, 1892.

Cretaceous: Staten Island.

Platanus aspera Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Platanus basilobata Ward. Bull. U. S. Geol. Surv., p. 35, pl. xvii, f. 1; xviii, f. 1-3, 3a; xix, f. 1, 1887.

Fort Union group: Seven-Mile and Clear Creeks, Montana.

Platanus cissoides Lx. Fl. Dak. Gr., p. 75, pl. lxi, f. 3, 1892

Dakota group: Kansas.

Platanus cordata nom. nov.

Quercus platania Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 386, 1872 [1873]; Tert. Fl., p. 160, pl. xxi, f. 1, 1878.

Eocene?: Cherry Creek, Oregon.

Laramie group?: Carbon, Wyoming.

Platanus diminutiva Lx. Cret. Fl., p. 73, pl. viii, f. 5, 1874.

Platanus diminutivus Lx. Am. Journ. Sci., vol. xlvi, p. 98, 1868.

Dakota group: Nebraska?

Platanus dissecta Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 13, pl. vii, f. 12; pl. x, f. 4, 5, 1878. Cret. and Tert. Fl., p. 249, pl. lvi, f. 4; pl. lvii, f. 1-2, 1883.

Miocene: Chalk Bluffs, Table Mountain, Corral Hollow, and Spanish Peak, California.

Platanus Guillelmæ Göpp. Zeitschr. Deutsch. Geol. Gesell., vol. iv, p. 492, 1852. Tert. Fl. v. Schossnitz, p. 21, pl. xi, f. 1, 2, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872]; Tert. Fl., p. 183, pl. xxv, f. 1-3, 1878.

Fort Union group: Yellowstone River, Montana; Bad Lands, Dakota.

Denver group: Golden, Colorado.

Denver group?: Carbon, Wyoming.

Eolignitic: McLees, Louisiana.

Platanus Haydenii Newby. Later Extinct Floras, p. 70, 1868; Ill. Cret. and Tert. Pl., pls. xix, xx, xxi, f. 1, 1883 [1884].

Fort Union group: Yellowstone River, Montana; Bow River.

Denver group: Sedalia and Golden, Colorado.

Laramie group?: Sand Creek, Colorado.

Platanus Heerii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 303, 1871 [1872]; Cret. Pl., p. 70, pl. viii, f. 4; ix, f. 1, 2, 1874; Rept. on Clays in N. J., p. 29, 1878.

Dakota group: Salina River, Kansas.

Amboy clay: Washington, New Jersey.

Mill Creek series: Mill Brook.

Platanus heterophyllus Newby. Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignite Tertiary: Wood End, Canada.

Platanus integrifolia Lx. = **Platanus Reynoldsii integrifolia**.

Platanus latiloba Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Blackbird Hill, Nebraska.

Platanus latior (Lx.) n. comb.

Platanus primæva Lx. Cret. Fl., p. 69, pl. vii, f. 2; pl. xxvi, f. 2, 1874; Fl.

Dak. Gr., p. 72, pl. viii, f. 7, 8b; x, f. 1, 1892.

Platanus aceroides? Göpp., var. **latior** Lx. Am. Journ. Sci., vol. xli, p. 97, 1868.

Dakota group: Nebraska, Kansas, and Minnesota.

Platanus latior grandidentata (Lx.) n. comb.

Platanus primæva grandidentata Lx. Fl. Dak. Gr., p. 73, pl. ix, f. 1, 2, 1892.

Dakota group: Kansas.

Platanus latior integrifolia (Lx.) n. comb.

Platanus primæva integrifolia Lx. Fl. Dak. Gr., p. 74, pl. xlix, f. 4, 1892.

Dakota group: Kansas.

Platanus latior subintegrifolia (Lx.) n. comb.

Platanus primæva subintegrifolia Lx. Fl. Dak. Gr., p. 73, pl. ix, f. 3, 4, 1892.

Dakota group: Kansas.

Platanus marginata (Lx.) Heer. Fl. Foss. Arct., vol. vii, p. 97, pl. xcviii, f. 3-5; pl. xcix, f. 2, 3; pl. ci, f. 5, 1883.

Viburnum marginatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1872 [1873]; Tert. Fl., 223, pl. xxxvii, f. 11; pl. xxxviii, f. 1, 4. [Non 2, 3, 5] 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes and Point of Rocks, Wyoming.

Platanus Newberrii Lx. = **Platanus Newberryana**.

Platanus? **Newberryana** Heer. Phyl. Crét. d. Nebr., p. 16, pl. i, f. 4, 1866.

Platanus Newberrii Lx. Am. Journ. Sci., vol. xli, p. 97, 1868.

Dakota group: Beatrice, Nebraska, etc.

Platanus nobilis Newby. Later Extinct Floras, p. 67, 1868; Dn., Trans. Roy. Soc. Canada, vol. iv., sec. iv, p. 24, pl. i, f. 7, 1886 [1887].

Fort Union group: Seven-Mile Creek, Montana.

Upper Laramie group: Calgary, Canada; Souris River, British Columbia.

Miocene: John Day Valley, Oregon.

Platanus occidentalis L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 68, 72, 1896.

Glacial: Morgantown, West Virginia.

Pleistocene: Don Valley, Toronto.

Platanus obtusiloba Lx. Am. Journ. Sci., vol. xli, p. 97, 1868.

Dakota group: Beatrice, Nebraska.

Platanus platanoides (Lx.) n. comb.

Viburnum platanoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.. p. 314, 1874 [1876]; Tert. Fl., p. 224, pl. xxxviii, f. 8, 9, 1878.

Laramie group: Black Buttes, Wyoming.

Platanus primæva Lx.= Platanus latior.

Platanus primæva grandidentata Lx.= Platanus latior grandidentata.

Platanus primæva integrifolia Lx.= Platanus latior integrifolia.

Platanus primæva subintegrifolia Lx.= Platanus latior subintegrifolia.

Platanus Reynoldsii Newby. Later Extinct Floras, p. 69, 1868; Lx., Tert. Fl., p. 185, pl. xxvi, f. 4, 5; pl. xxvii, f. 1-3, 1878.

Fort Union group: Montana.

Upper Laramie group: Canada.

Denver group: Golden, Colorado.

Miocene?: ?John Day Valley, Oregon.

Platanus Reynoldsii integrifolia Lx. Tert. Fl., p. 185, 1878.

Platanus integrifolia Lx. MSS. in Lx., Tert. Fl., p. 185, 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

Platanus recurvata Lx.=Sassafras recurvatum.

Platanus rhomboidea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1873 [1874]; Tert. Fl. 186, pl. xxvi, f. 6, 7, 1878.

Viburnum anceps Lx. Tert. Fl., p. 227, pl. xxxviii, f. 11, 1878.

Denver group: Golden, Colorado.

Platanus? sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: Ribstone Creek.

Platanus sp., Cragin. Bull. Washburn College Laboratory, vol. ii, no. 10, p. 66, 1889.

Cretaceous: Cimarron Valley, south of Mead County, Kansas.

Platanus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie?: Dutton Creek coal, Wyoming.

PLATYPTERYGIUM Schimper. In Zittel Handb. Pal., vol. ii, p. 225, 1880.

Platypterygium densinerve Font. Potomac Fl., p. 169, pl. xxx, f. 8; xxxi, f. 1, 4; xxxii, f. 1, 2; xxxiii, f. 1; xxxiv, f. 1; xxxv, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Platypterygium Rogersianum Font. Potomac Fl., p. 171, pl. xxxi, f. 2; xxxiii, f. 2; xxxiv, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

POACITES Brongniart. Prod. Hist. Vég. Foss., p. 137, 1828.

Poacites lævis Al. Br. In Stizenberger, Uebersicht d. Vers. d. Baden, p. 74, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872].

Green River group: Barrel Springs, Wyoming.

Poacites Mengeanus Heer. Mioc. balt. Fl., p. 59, pl. xv, f. 2-11, 1859; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 35, 1887.

Pliocene?: Clear Lake, California

Poacites tenue-striatus Heer. Fl. Foss., Alask., p. 24, pl. i, f. 14, 1869.

Eocene?: Port Graham, Alaska.

PODOCARPITES Andrae. Abh. der k. k. geol. Reichsanst., vol. ii, abt. iii p. 45, 1853.

Podocarpites Tyrrellii Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887.

Belly River series: Vermillion River.

PODOCARPUS (L'Heritier) Persoon. Syn., vol. ii, p. 580, 1807

Podocarpus eocenica? Ung. Foss. Fl. v. Sotzka, p. 28 [158], pl. ii, [xxii], f. 11-16, 1850; Lx., Cret. and Tert. Fl., p. 140, 1883.

Green River group: Florissant, Colorado.

PODOGONIUM Heer. Fl. Tert. Helv., vol. iii, p. 113, 1859.

Podogonium acuminatum Lx. Cret. and Tert. Fl., p. 201, 1883.

Green River group: Florissant, Colorado.

Podogonium americanum Lx. Tert. Fl., p. 288, pl. lix, f. 5; pl. lxiii, f. 5; pl. lxxv, f. 6, 1878.

Podogonium sp.? Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874].

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Podogonium sp., Lx. = Podogonium Americanum.

PODOZAMITES Fr. Braun in Münster Beiträge z. Petrefacten-Kunde, vol. ii, heft vi, p. 28, 1843.

Podozamites acuminatus Hollick in Newberry. Fl. Amboy Clays, p. 45, pl. xiii, f. 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Podozamites acutifolius Font. Potomac Fl., p. 181, pl. lxxx, f. 6; lxxxv, f. 10, 15; lxxxvii, f. 1, clxx, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, Deep Bottom, near Telegraph Station, and near Brooke, Virginia.

Trinity division: Glenrose, Texas.

Podozamites angustifolius (Eichw.) Schimp. Pal. Vég., vol. ii, p. 160, 1870; Lx., Cret. and Tert. Fl., p. 28, 1884; Newby., Fl. Amboy Clays, p. 44, pl. xiii, f. 1-4, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Podozamites caudatus Lx. = *Dammamites caudatus*.

Podozamites distantinervis Font. Potomac Fl., p. 179, pl. lxxix, f. 9; lxxxii, f. 4; lxxxiii, f. 1, 2, 6, 7; lxxxiv, f. 1, 2, 8, 10, 14, 15; lxxxv, f. 12, 16, 1889.

Potomac formation: Near Potomac Run, Fredericksburg, and near Telegraph Station, Virginia.

Podozamites emarginatus Lx. = *Dammarites emarginatus*.

Podozamites grandifolius Font. Potomac Fl., p. 180, pl. lxxxiii, f. 2; lxxxiii, f. 5, 1889.

Potomac formation: Fredericksburg, and near Potomac Run, Virginia.

Podozamites Haydenii Lx. Cret. and Tert. Fl., p. 27, 1883.

Pterophyllum Haydenii Lx. Am. Journ. Sci., vol. xvi, p. 91, 1868; Cret. Fl., p. 49, pl. i, f. 6, 6b, 1878.

Dakota group: Decatur, Nebraska.

Podozamites lanceolatus (L. and H.) Schimp. Pal. Vég., vol. ii, p. 160, 1870; Lx., Fl. Dak. Gr., p. 28, pl. i, f. 5, 6, 1891; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 6, pl. i, f. 3, 1885 [1886].

Zamia lanceolata L. and H. Foss. Fl., vol. iii, pl. 193, 1836.

Kootanie: Martin Creek; Kootanie Pass., etc, British Columbia.

Dakota group: Kansas.

Podozamites latipennis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 42, pl. xiv, f. 1-9; xv, f. 2a, 3b, 1884; Weed, Bull. Geol. Soc. Am., vol. iii, p. 323, 1892. [Doubtful.]

Kootanie: Sun River, Montana.

Podozamites marginatus? Heer. Fl. Foss. Arct., vol. vi., abt. ii, p. 43, pl. xvi, f. 10, 1882; Fl. Amboy Clays, p. 44, pl. xiii, f. 5, 6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Podozamites nervosa Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 6, 1891.

Kootanie: Great Falls, Montana.

Podozamites oblongus Lx. Cret. and Tert. Fl., p. 28, pl. i, f. 10, 11.

Dakota group: Kansas.

Podozamites pedicellatus Font. Potomac Fl., p. 180, pl. lxxvi, f. 1; lxxviii, f. 7; lxxxii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Podozamites praelongus Lx. = *Dammarites caudatus*.

Podozamites stenopus Lx. Fl. Dak. Gr., p. 27, pl. i, f. 7, 1891.

Dakota group: Kansas.

Podozamites subfalcatus Font. Potomac Fl., p. 179, pl. lxxviii, f. 6; clxx, f. 9, 1889.

Potomac formation: Near Brooke, Virginia.

Podozamites tenuinervis Heer. Fl. Foss. Arct., vol. vi., abt. ii, p. 44, pl. xvi, f. 9, 1882; Newby., Bull. Torr. Bot. Club, vol. xiii, p. 35, 1886.

Amboy clay: New Jersey.

***Podozamites* sp.**, Font. Proc. U. S. Nat. Mus., vol. xvi, p. 267, pl. xxxvi, f. 8, 1893.

Trinity division: Glenrose, Texas.

Pollen sacs? Font. Potomac Fl., p. 272, pl. cxxxvi, f. 7, 1889.

Potomac formation: Virginia.

POLYPODIUM (Tournefort) Linnaeus. Gen. Pl., p. 322, 1737.

Polypodium dentatum Font. Potomac Fl., p. 105, pl. xxii, f. 4, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Polypodium fadyenioide Font. Potomac Fl., p. 104, pl. xvi, f. 4, 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

POPULITES Lesquereux. Am. Journ. Sci., vol. xlvii, p. 93, 1868.
Populites affinis Lx. = *Cissites affinis*.

Populites cyclophylla (Heer) Lx. Am. Journ. Sci., vol. xlvii, p. 93, 1868; Cret. Fl., p. 59, 1874; Fl. Dak. Gr., p. 48, 1891.

Populus cyclophylla Heer. Proc. Acad. Nat. Sci., Phila., vol. x, p. 266, 1858.

Cissites cyclophylla Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, 1874 [1876].

Dakota group: New Ulm, Minnesota; Lancaster and Decatur, Nebraska; Peace River, Northwest Territory.

Populites elegans Lx. Am. Journ. Sci., vol. xlvii, p. 94, 1868; Geol. and Nat. Hist. Surv. Minn. iii, p. 10, pl. A, f. 2; pl. B, f. 1, 1893.

Dakota group: Decatur, Nebraska; New Ulm, Minnesota.

Populites fagifolia Lx. = *Grewiopsis flabellata*.

Populites flabellata Lx. = *Grewiopsis flabellata*.

Populites lancastriensis Lx. Cret. Fl., p. 58, pl. vii, f. 1, 1874.

Populus lancastriensis Lx. Am. Journ. Sci., vol. xlvii, p. 93, 1868.

Dakota group: Lancaster, Nebraska; New Ulm, Minnesota.

Populites litigiosus (Heer) Lx. Fl. Dak. Gr., p. 46, pl. vii, f. 7. pl. viii, f. 5; pl. xlvii, f. 6; pl. xlvii, f. 1, 1891.

Populus litigiosa Heer. Phyll. Crét. d. Nebr., p. 13, pl. i, f. 2, 1866.

Dakota group: Kansas; New Ulm, Minnesota.

Populites microphyllus Lx. Trans. Am. Phil. Soc., vol. xiii, p. 430, pl. xxiii, f. 2, 3, 1869.

Dakota group: Kansas.

Populites ovata Lx. = *Ampelophyllum ovatum*.

Populites probalsamifera Dn. Traus. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 23, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

Populites quadrangularis Lx. = *Hamamelites quadrangularis*.

Populites salinae Lx. = *Menispermities salinae*.

Populites salisburyæfolius Lx. = *Cissites salisburyæfolius*.

Populites Sternbergii Lx. Fl. Dak. Gr., p. 45, pl. vii, f. 8, 9, 1891.

Dakota group: Kansas.

Populites Winchelli Lx. Geol. and Bot. Hist. Surv. Minn., vol. iii, p. 12, pl. B, f. 2, 1893.

Dakota group: New Ulm, Minnesota.

POPULOPHYLLUM Fontaine. Potomac Fl., p. 311, 1889.

Populophyllum crassinerve Font. Potomac Fl., p. 312, pl. clviii, f. 4, 1889.

Potomac formation: Deep Bottom, Virginia.

Populophyllum hederæforme Font. Potomac Fl., p. 311, pl. clxvi, f. 3, 1889.

Potomac formation: Virginia.

Populophyllum reniforme Font. Potomac Fl., p. 311, pl. clv, f. 9; clvi, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

POPULUS Linnaeus. Syst., ed. i, 1735.

Populus acerifolia Newby. Later Extinct Floras. v. 65. 1868: Ill. Cret. and Tert. Pl., pl. xiii, f. 5-8, 1878.

Fort Union group: Yellowstone River, Montana.

Canadian upper Laramie: Canada; Souris River, etc.

Populus aequalis Schimp. = *Populus laevigata*.

Populus amblyrhyncha Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. vi, f. 1-8; vii, f. 1-3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Populus anomala Ward. Bull. U. S. Geol. Surv., no. 37, p. 13, pl. viii, f. 7, 1887.

Fort Union group: Burns's Ranch, Montana.

Populus? apiculata Newb. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. iii, f. 2, 1892; Newby., Fl. Amboy Clays, p. 65, pl. xv, f. 3, 4, 1895 [1896].

Cretaceous: Staten Island.

Amboy clay: Woodbridge, New Jersey.

Populus arctica Heer. Fl. Foss. Arct., vol. i, p. 100, pl. iv, f. 6a, 7; pl. v; pl. vi, f. 5, 6; pl. viii, f. 5, 6; pl. xvii, f. 5 f. e.; op. cit., p. 137, pl. xxi, f. 14, 15a, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 300, 1871 [1872]; Tert. Fl., p. 178, pl. xxiii, f. 1-6, 1878.

Populus decipiens Lx. Ann. Rept., op. cit., p. 385, 1872 [1873]; Tert. Fl., p. 179, pl. xxiii, f. 7-11, 1878.

From Laramie to Miocene: Abundant.

Miocene?: Mackenzie River; Great Valley; Souris River.

Populus aristolochioides Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875.

Dakota group: Kansas.

Populus attenuata Al. Br. Lx. = *Populus subrotunda*.

Populus auriculata Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 356, pl. iv, f. 4, 1895.

Potomac formation: Mount Vernon, Virginia.

Populus balsamifera L. Sp. Pl., ed. i, vol. ii, p. 1034, 1753; Dn., Can. Nat., vol. ii, p. 422, 1857; op. cit., new ser., vol. iii, p. 72, f. 2-4, 1868; Geol. Hist. Pl., p. 228, f. 78, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 72, 1896.

Pleistocene: Greens Creek and Bessier's Wharf, Ottawa River.

Populus balsamoides Göpp. Tert. Fl. v. Schosnitz, p. 23, pl. xv, f. 5, 6, 1855; Heer, Fl. Foss. Alask., p. 26, pl. ii, f. 3, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1871 [1872].

Eocene?: Port Graham and near Litho, Alaska; Yellowstone Lake.

Miocene: Corral Hollow, California.

Populus balsamoides eximia (Göpp.) Lx. Cret. and Tert. Fl., p. 226, pl. xlvia, f. 10, 1883.

Populus eximia Göpp. Tert. Fl. v. Schossnitz, p. 23, 1855.

Fort Union group: Bad Lands, Dakota.

Populus balsamoides? Göpp., var. **latifolia** Lx. Cret. and Tert. Fl., p. 158, pl. xxxi, f. 4, 1883.

Green River group: Florissant, Colorado.

Populus Berggreni Heer. Öfversigt. K. Vetenskaps-Akad. Förhandl., 1871, p. 1183, 1871; Lx., Fl. Dak. Gr., p. 42, pl. viii, f. 2-4, 1891.

Dakota group: Kansas; New Ulm, Minnesota.

Populus cordata Newby. Later Extinct Floras, p. 60, 1868; Ill. Cret. and Tert. Pl., pl. xiv, f. 6, 1878.

Fort Union group: Yellowstone River, Montana.

Populus cordifolia Newby. Later Extinct Floras, p. 18, 1868; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Dakota group: Nebraska.

Upper Laramie group: Canada.

Populus craspedodroma Ward. Bull. U. S. Geol. Surv., no. 37, p. 21, pl. viii, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

Populus cuneata Newby. Later Extinct Floras, p. 64, 1868; Ill. Cret. and Tert. Pl., pl. xiv, f. 1-4, 1878.

Fort Union group: Yellowstone River, Montana; Bad Lands, Dakota.

Populus cyclophylla Heer=**Populites cyclophyllus**.

Populus daphnogenoides Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. vii, f. 4-6, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Eocene?: Similkameen Valley, British Columbia.

Populus? Debeyana Heer=**Juglans Debeyana**.

Populus decipiens Lx.=**Populus arctica**.

Populus denticulata Heer. Fl. Foss. Arct., vol. vii, p. 20, pl. iv, f. 5, 1883; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 40, 1887.

——: Upper Kanab Valley, Utah.

Populus elliptica Newby. Later Extinct Floras, p. 16, 1868.

Dakota group: Blackbird Hill, Nebraska.

Populus extremuloides Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 725, pl. c, f. 1, 2; ci, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

Populus flabellum Newby. Bost. Journ. Nat. Hist., vol. vii, p. 524, 1863.

——: Bellingham Bay, Washington.

Populus genatrix Newby. Later Extinct Floras, p. 64, 1868; Dn., Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Fort Union group: Yellowstone River, Montana.

Canadian upper Laramie: North Saskatchewan; Souris River, Great Valley; Canada.

Populus glandulifera Heer. Fl. Tert. Helv., vol. ii, p. 17, pl. lviii, f. 5-11; pl. lxxviii, f. 7 1856; Cret. and Tert. Fl., p. 226, pl. xlvia, f. 3, 4, 1883.

Eocene?: Fort Graham, Alaska.

Fort Union group: Montana; Bad Lands, Dakota.

Miocene: John Day Valley, Oregon.

Populus grandidentata Mx. Flor. Bor. Am., vol. ii, p. 243, 1803; Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890.

Pleistocene: Greens Creek, Ottawa River; Montreal, Canada.

Populus Grewiopsis Ward. Bull. U. S. Geol. Surv., no. 37, p. 23, pl. ix, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Populus harkeriana Lx. Fl. Dak. Gr., p. 44, pl. xlv, f. 4, 1892.

Dakota group: Fort Harker, Kansas.

Populus hederoides Ward. Bull. U. S. Geol. Surv., no. 37, p. 22, pl. viii, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Populus Heerii Sap. Ann. d. Sci. Nat., 4th ser., vol. xvii, p. 87, pl. vii, f. 3, 1863; Lx., Cret. and Tert. Fl., p. 157, pl. xxx, f. 1-8; pl. xxxi, f. 11, 1883.

Green River group: Florissant, Colorado.

Populus Heliadum Ung. Lx., 1873=**Populus Ungerii**.

Populus Hookeri Heer. Fl. Foss. Arct., vol. i, p. 137, pl. xxi, f. 16, 1868; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 71, pl. x, f. 5, 1889.

Miocene?: Mackenzie River.

Populus hyperborea Heer. Fl. Foss. Arct., vol. iii, pt. ii, p. 106, 1873; Lx., Fl. Dak. Gr., p. 43, pl. iii, f. 9-11; pl. viii, f. 1; pl. xlvii, f. 5. 1892.

Dakota group: Kansas.

Populus inæqualis Ward. Bull. U. S. Geol. Surv., no. 37, p. 24, pl. ix, f. 2, 1887.

Fort Union group: Burns's Ranch, Montana.

Populus kansaseana Lx. Fl. Dak. Gr., p. 42, pl. xvii, f. 1-7, 1892.

Dakota group: Kansas.

Populus Knightii Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: Dutton Creek coal, Wyoming.

Populus lævigata Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 205, 1868; Tert. Fl., p. 175, pl. xxii, f. 9, 1878.

Populus æqualis Schimp. Pal. Vég., vol. ii, p. 693, 1872.

Denver group?: Rock Creek, Laramie Plains, Wyoming.

Populus Lancastrensis Lx. = **Populites Lancastrensis**.

Populus latidentata Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 16, 1885 [1886].

Belly River series: Medicine Hat.

Populus latior Al. Br. In Buckl. Geol., p. 512, 1835?; Heer., Fl. Foss. Alask., p. 25, pl. ii, f. 4, 1869.

Eocene?: Port Graham.

Bull. 152—12

Populus latior cordifolia Heer. Fl. Tert. Helv., vol. ii, p. 12, pl. iv, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872].

Populus latior transversa Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872].

Laramie group?: Medicine Bow, Wyoming.

Populus latior transversa Heer. = *Populus latior cordifolia*.

Populus latior truncata Al. Br. In Stizenberger, Uebers., p. 79, 1851; Lx., Cret. and Tert. Fl., p. 226, pl. xlv, f. 14, 1883.

Fort Union group: Bad Lands, Dakota.

Populus leucophylla Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Heer, Fl. Foss. Alask., p. 26. pl. iii, f. 4, 5, 1869.

Eocene: Alaska?

Populus Lindgreni Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 725, pl. c. f. 3, 1898.

Payette formation: Marsh, Idaho.

Populus litigiosa Heer = *Populites litigiosus*.

Populus longior Dn. Trans. Roy. Soc. Canada, vol. i. sec. iv, p. 27, 1882 [1883].

Upper Cretaceous: Nanaimo; Baynes Sound.

Populus Leuce (Rossm.) Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Heer, Proc. Acad. Nat. Sci. Phila., vol. x, p. 265, 1858.

Dakota group: Kansas?

Populus leucophylla Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872].
[Not afterward recognized by Lesquereux.]

Laramie group?: Spring Canyon, Montana.

Populus Meedsii Kn. Proc. U. S. Nat. Mus., vol. xvi, p. 34, pl. i, f. 1, 2, 1893.

Fort Union group: Glendive?, Montana.

Populus melanaria Heer. Lx. = *Populus melanarioides*.

Populus melanarioides Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 379, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1874 [1876]; Tert. Fl., p. 174, pl. lxii, f. 5, 1878.

Populus melanaria Heer Lx. Ann. Rept., op. cit., p. 302, 1874 [1876]; Tert. Fl. p. 173, pl. lxiv, f. 5, 1878.

Montana formation: Point of Rocks, Wyoming.

Populus microphylla Newby. Later Extinct Floras, p. 17, 1868.

Dakota group: Blackbird Hill, Nebraska.

Populus monodon Lx. Trans. Am. Phil. Soc., vol. xiii, p. 413, pl. xv, f. 1, 2, 1869.

Eolignitic: Mississippi.

Populus monodon Lx. [Tert. Fl., pl. xxiv, f. 1, 2] = *Populus mutabilis ovalis* and *Ficus uncata*.

Populus mutabilis crenata Heer. Fl. Tert. Helv., vol. ii, p. 21, pl. lx, f. 5, 8, 11, 12a, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 386, 1872 [1873]. [Not afterwards referred to by Lesquereux.]

——: Carbon, Wyoming.

Populus mutabilis lancifolia Heer. Fl. Tert. Helv., vol. ii, p. 23, pl. lxi, f. 7, 8, 10, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Spring Canyon, Montana.

Populus mutabilis ovalis Heer. Fl. Tert. Helv., vol. ii, p. 22, pl. i, f. 1, 2; ii, f. 2 a b; lxi, f. 1-3, 6, 9; lxiii, f. 4, 1856; Lx., Tert. Fl., p. 177, pl. xxiv, f. 3, 4, 1878.

Populus ovalis? Göpp. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872].

Populus mutabilis repando-crenata Heer. In Lx., Trans. Am. Phil. Soc., vol. xiii, p. 413, pl. xviii, f. 4-6, 1869.

Ficus ovalis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876].

Populus monodon Lx. Ex. p. Tert. Fl., p. 180, pl. xxiv, f. 2, 1878.

Livingston beds: Spring Canyon, Montana.

Denver group: Golden and Plum Creek, Colorado.

Laramie group: Black Buttes, Wyoming.

Laramie group?: Evanston, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Populus mutabilis repando-crenata Heer = *Populus mutabilis ovalis*.

Populus nebrascensis Newby. Later Extinct Floras, p. 62, 1868.

Fort Union group: Yellowstone River, Montana.

Denver group: Golden, Colorado.

Populus nebrascensis acute-dentata Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

Populus nebrascensis grandidentata Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

Populus nebrascensis longifolia Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 48, 1888.

Denver group: Golden, Colorado.

Populus nebrascensis rotundata Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

Populus nervosa Newby. Later Extinct Floras, p. 61, 1868.

Fort Union group: Yellowstone River, Montana; North Saskatchewan, Canada.

Populus nervosa elongata Newby. Later Extinct Floras, p. 62, 1868.

Fort Union group: Yellowstone River, Montana.

- Populus obtrita** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 82, f. (in text) 12, 1890.
Miocene?: Similkameen Valley, British Columbia.
- Populus occidentalis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 727, pl. xcix, f. 14, 1898.
Payette formation: Marsh, Idaho.
- Populus ovalis**? Göpp. Lx. [1871]=*Populus mutabilis ovalis*.
- Populus oxyphylla** Sap. Ann. Sci. Nat. Bot., 5th ser., vol. viii, p. 73, 1867; Lx., Cret. and Tert. Fl., p. 159, pl. xxxviii, f. 9-11, 1883.
Green River group: Florissant, Colorado.
- Populus oxyrhyncha** Ward. Bull. U. S. Geol. Surv., no. 37, p. 21, pl. viii, f. 1, 2, 1887.
Fort Union group: Seven-Mile Creek, Montana.
- Populus polymorpha** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].
Miocene?: Bridge Creek, Oregon.
- Populus potomacensis** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 356, pl. iv, f. 1-3, 1895.
Potomac formation: Mount Vernon, Virginia.
- Populus? problematica** Kn. Bull. U. S. Geol. Surv., no. 105, p. 51, pl. vi, f. 5, 6, 1893.
Laramie group: Head of Fir Canyon, near Bozeman, Montana.
- Populus protozadachii** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vii, f. 25, 1882 [1883].
Upper Cretaceous: Newcastle Island.
- Populus rectinervata** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 26, 1882 [1883].
Upper Cretaceous: Baynes Sound.
- Populus rhomboidea** Lx. Am. Journ. Sci., vol. xxvii, 2d ser., p. 360, 1859.
Upper Cretaceous: Newcastle Island; Nanaimo, Vancouver Island.
Miocene?: Mackenzie River.
Lignitic Tertiary: Porcupine Creek.
- Populus Richardsoni** Heer. Fl. Foss. Arct., vol. i, p. 98, pl. iv, f. 1-5, vi, f. 7, 8; xv, f. 1c; 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 411, 1873 [1874]; Tert. Fl., p. 177, pl. xxii, f. 10-12, 1878.
Green River group: Elko Station, Nevada.
Canadian upper Laramie: Calgary, Canada.
Fort Union group: Montana.
Eocene?: Chignik Bay, Alaska.
Miocene: Mackenzie River.
- Populus rotundifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].
Fort Union group: Yellowstone River.
- Populus Russellii** Kn. Bull. U. S. Geol. Surv., no. 108, p. 104, 1893.
Miocene?: Ellensburg, Washington.

- Populus smilacifolia** Newby. Later Extinct Floras, p. 66, 1868.
Fort Union group: Fort Union, North Dakota.
- Populus speciosa** Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. v, f. 4-7, 1887.
Fort Union group: Clear Creek, Montana.
- Populus stygia** Heer. Fl. Foss. Arct., vol. iii, apt. ii, p. 107, 1873; Lx.
Fl. Dak. Gr., p. 44, pl. iii, f. 12, 1892.
Dakota group: Kansas.
- Populus subrotunda** Lx. Am. Journ. Sci., vol. xlv, p. 205, 1868.
Populus attenuata Al. Br. Lx., Am. Journ. Sci., vol. xlv, p. 205, 1868.
Populus subrotundata Lx. Tert. Fl., p. 173, pl. xxiv, f. 6-8, 1878.
——: Carbon and Evanston, Wyoming; Rock Creek and Laramie
Plains, Wyoming; Golden, Colorado?
- Populus subrotundata Lx. = Populus subrotunda.
- Populus tenuinervata** Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 48, 1888.
Denver group: Golden, Colorado.
- Populus trinervis** Dn. Trans. Roy. Soc., Canada, vol. i, sec. iv, p. 26,
1882 [1883].
Upper Cretaceous: Nanaimo; Baynes Sound.
- Populus Unger** Lx. Tert. Fl., p. 175, pl. xxiv, f. 5, 1878.
Populus Heliadum Ung. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,
p. 397, 1873 [1874].
Denver group: Golden, Colorado.
- Populus Whitei** Ward. Bull. U. S. Geol. Surv., no. 37, p. 22, pl. viii,
f. 4, 1887.
Fort Union group: Burns's Ranch, Montana.
- Populus Zaddachi** Heer. Fl. Tert. Helv., vol. iii, p. 307, 1859; Lx.,
Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872];
Cret. and Tert. Fl., p. 158, pl. xxxi, f. 8, 1883.
Eocene?: Port Graham, Alaska.
Miocene: Chalk Bluffs, California.
Green River group: Florissant, Colorado.
Fort Union group: Montana and Dakota.
- Populus** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73.
Appen. I, p. 68, 1873.
Cretaceous: Vancouver Island, British Columbia.
- Populus** sp. [Wood], Dn. Rept. on Geol. and Res. near 49th Parallel,
Appen. A, p. 331, 1875.
Lignitic tertiary: Forty-ninth parallel.
- Populus** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.
[Wood.]
Fort Pierre series: Head of Swift Current.
- Populus** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, 1882
[1883].
Upper Cretaceous; Baynes Sound.
- Populus** sp., Kn. Bull. U. S. Geol. Surv., no. 105, p. 50, pl. vi, f. 7-9,
1893.
Laramie group: Head of Bear Canyon, near Bozeman, Montana.

PORANA Burm. f. Fl. Ired., p. 51, 1768.

Porana Bendirei (Ward) Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16 pl. viii, f. 4, 1888.

Marsilea Bendirei Ward. Fifth Ann. Rept. U. S. Geol. Surv., p. 446, 1883-84 [1885].

Miocene: John Day Valley, Oregon.

Porana Speirii Lx. Cret. and Tert. Fl., p. 172, pl. xxviii, f. 15, 1883.
Green River group: Florissant, Colorado.

Porana tenuis Lx. Cret. and Tert. Fl., p. 173, 1883.
Green River group: Florissant, Colorado.

Porana sp., Lx. Proc. U. S. Nat. Mus., vol. xi, p. 13, 1888.
Eolignitic: Wickliffe, Kentucky.

POTAMOGETON (Tournefort) Linnaeus. Syst. ed., i, 1735.

Potamogeton geniculatus Al. Br. Neues Jahrb. 1845, p. 168, 1845;
Lx., Cret. and Tert. Fl., p. 142, 1883.

Green River group: Florissant, Colorado.

Potamogeton pectinatus L. Sp. Pl., p. 127, 1753; Penhallow, Trans. Roy. Soc., Canada, 2d ser., vol. ii, sec. iv, p. 66, 72, 1896.

Pleistocene: Besserer's Wharf, Ottawa River.

Potamogeton perfoliatus L. Sp. Pl., p. 126, 1753; Dn., Can. Nat., vol. iii, new ser., p. 72, 1868; Geol. Hist. Pl., p. 229, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River
Canada.

Potamogeton pusillus L. Sp. Pl., p. 127, 1753; Dn., Can. Nat., vol. iii, new ser., p. 73, 1868; Geol. Hist. Pl., p. 229, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River,
Canada.

Potamogeton rutilans Wolfg. Penhallow = **Potamogeton rutilus**.

Potamogeton rutilus Wolfg.

Potamogeton rutilans? Wolfg. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River.

Potamogeton Robbinsii Oakes. Hovey's Mag., vol. vii, p. 180, 1841;
Kn., Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

Potamogeton? verticillatus Lx. Cret. and Tert. Fl., p. 142, pl. xxiii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

POTENTILLA Linnaeus. Syst., ed. i, 1735.

Potentilla anserina L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 330, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 73, 1896.

Potentilla norvegica L. Dn., Can. Nat., vol. ii, p. 422, 1857.

Potentilla canadensis L. Dn., loc. cit., new ser., vol. iii, p. 71, 1868.

Potentilla simplex? Michx. Dn., Geol. Hist. Pl., p. 228, 1888.

Pleistocene: Greens Creek and Besserer's Wharf, Ottawa River,
Canada.

Potentilla canadensis L.=*Potentilla anserina*.

Potentilla norvegica L.=*Potentilla anserina*.

Potentilla simplex? Mx.=*Potentilla anserina*.

PREISSITES Knowlton. Bull. Torr. Bot. Club, vol. xxi, p. 458, 1894.

Preissites Wardii Kn. Bull. Torr. Bot. Club, vol. xxi, no. 10, p. 458, pl. ccxix, 1894.

Fort Union group: Burns's Ranch, 30 miles below Glendive, Montana.

Prinos integrifolia Ell. Lx.=*Ilex integrifolia*.

PROTEÆPHYLLUM Fontaine. Potomac Fl., p. 281, 1889.

Proteæphyllum dentatum Font. Potomac Fl., p. 286, pl. clvi, f. 7; clxxii, f. 1, 4; clxxiii, f. 12, 14, 1889.

Potomac formation: Baltimore, Maryland.

Proteæphyllum ellipticum Font. Potomac Fl., p. 285, pl. cxlii, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Proteæphyllum oblongifolium Font. Potomac Fl., p. 284, pl. cxxxix, f. 5; cxl, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Proteæphyllum orbiculare Font. Potomac Fl., p. 283, pl. cxxxix, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

Proteæphyllum ovatum Font. Potomac Fl., p. 285, pl. cxli, f. 1. 1889.

Potomac formation: Fredericksburg, Virginia.

Proteæphyllum reniforme Font. Potomac Fl., p. 282, pl. cxxxix, f. 3; clvi, f. 4; clx, f. 1, 2, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Virginia.

Proteæphyllum tenuinerve Font. Potomac Fl., p. 286, pl. cl, f. 13; clvi, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, Virginia.

Proteæphyllum sp., Font. Potomac Fl., p. 284, pl. cxxxix, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

PROTEOIDES Heer. Phyll. Crét. d. Nebr., p. 17, 1866.

Proteoides acuta Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 7, 8, 1866; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 5-7, 1869.

Dakota group: Kansas and Nebraska.

Proteoides daphnogenoides Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 9, 10, 1866; Newby., Fl. Amboy Clays, p. 72, pl. xvii, f. 8, 9; xxxii, f. 11, 13, 14; xxxiii, f. 3; xli, f. 15, 1895 [1896].

Dakota group: Decatur, Nebraska.

Amboy clay: New Jersey; Staten Island; Sea Cliff, Long Island.

Mill Creek series: Mill Creek.

Proteoides grevilleæformis Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 11, 1866; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 432, pl. xxiii, f. 8, 1869.

Dakota group: Decatur, Nebraska; Kansas.

Proteoides lancifolius Heer. Neue Denkschr. Schweiz. Gesel., vol. xxiv, p. 12, pl. iii, f. 5, 6, 1871; Lx., Cret. and Tert. Fl., p. 50, 1883; Fl. Dak. Gr., p. 90, pl. xv, f. 5; 1, f. 8, 1892.

Dakota group: Fort Harker, Kansas.

Proteoides longus Heer = *Myrica longa*.

Proteoides major Dn., Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xii, f. 54, 1893 [1894].

Upper Cretaceous: Wellington mine, Vancouver Island.

Proteoides Neillii Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xii, f. 53, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

Proteoides sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Sayreville, New Jersey.

Proteoides sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xiii, f. 55, 1893 [1894].

Upper Cretaceous: Wellington mine, Vancouver Island.

PROTOFICUS Saporta. Fl. Foss. Travert. d. Sézanne: Mem. Soc. Geol. d. Fr., 2d ser., vol. vii, p. 67, 1868.

Protoficus inequalis Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Protoficus Zeilleri Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

PROTOPHYLLUM Lesquereux. Cret. Fl., p. 100, 1874.

Protophyllum boreale Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iv, f. 13, 1882 [1883].

—: Peace River, Northwest Territory.

Protophyllum crassum Lx. Fl. Dak. Gr., p. 193, pl. lxxv, f. 4, 1892.

Dakota group: Kansas.

Protophyllum credneroides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 363, pl. iii, f. 1; pl. viii, f. 4, 1874 [1876]; Cret. and Tert. Fl., p. 90, pl. ii, f. 1-3, 1883; Fl. Dak. Gr., p. 194, pl. xxxvi, f. 11; pl. xliii, f. 4, 5, 1892.

Dakota group: Kansas; New Ulm, Minnesota.

Protophyllum crenatum Kn. in Lx. Fl. Dak. Gr., p. 190, pl. lxxv, f. 7, 1892.

Dakota group: Kansas.

Protophyllum denticulatum Lx. Fl. Dak. Gr., p. 193, pl. xxxvi, f. 9, 1892.

Dakota group: Kansas.

Protophyllum dimorphum Lx. Fl. Dak. Gr., p. 190, pl. xli, f. 1, 1892.

Dakota group: Kansas.

Protophyllum Haydenii Lx. Cret. Fl., p. 106, pl. xvii, f. 3, 1874; Fl. Dak. Gr., p. 192, pl. xliii, f. 1; pl. xlv, f. 1, 2, 1892.

Pterospermites Haydenii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872].

Dakota group: Kansas.

Protophyllum intergerrimum Lx. Fl. Dak. Gr., p. 192, pl. xliii, f. 3, 1892; Geol. and Nat. Hist. Surv. Minn., p. 21, pl. B, f. 10, 11, 1893.

Dakota group: Mankato, Minnesota.

Protophyllum Leconteanum Lx. Cret. Fl., p. 103, pl. xvii, f. 4; pl. xxvi, f. 1, 1874; Fl. Dak. Gr., p. 187, pl. xl, f. 1, 1892.

Credneria Leconteana Lx. Am. Journ. Sci., vol. xvi, p. 98, 1868.

Dakota group: Brookville, Kansas; Peace River, Northwest Territory.

Protophyllum minus Lx. Cret. Fl., p. 104, pl. xix, f. 2; pl. xxvii, f. 1, 1874.

Dakota group: Kansas.

Protophyllum? Mudgii (Lx.).

Quercus Mudgii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872].

Protophyllum Mudgii Lx. Cret. Fl., p. 106, pl. xviii, f. 3, 1874.

Dakota group: Kansas.

Protophyllum multinerve Lx. Cret. Fl., p. 105, pl. xviii, f. 1, 1874; Fl. Dak. Gr., p. 191, pl. xliii, f. 2; lxv, f. 1, 1892.

Pterospermites multinervis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872].

Dakota group: Southern Kansas.

Protophyllum nanaimo Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 35, 1882 [1883].

Upper Cretaceous: Nanaimo; Baynes Sound.

Protophyllum nebrascense Lx. Cret. Fl., p. 103, pl. xxvii, f. 3, 1874.

Dakota group; Decatur, Nebraska.

Protophyllum obovatum Newby. Fl. Amboy Clays, p. 128, pl. xxxviii, f. 4, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

Protophyllum præstans Lx. Fl. Dak. Gr., p. 188, pl. xli, f. 2, 3; pl. xlii, f. 3, 4, 1892.

Dakota group: Kansas.

Protophyllum pseudospermoides Lx. Fl. Dak. Gr., p. 194, pl. lix, f. 2, 1892.

Dakota group: Kansas.

Protophyllum pterospermifolium Lx. Fl. Dak. Gr., p. 195, pl. lix, f. 1, 1892.

Dakota group: Kansas.

Protophyllum quadratum Lx. Cret. Fl., p. 104, pl. xix, f. 1, 1874.

Pterospermites quadratus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 301, 1871 [1872].

Dakota group: South of Fort Harker, Kansas.

Protophyllum querciforme Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 227, pl. cccxxvii, f. 1, 1895.

Dakota group: Fort Harker, Kansas.

Protophyllum rugosum Lx. Cret. Fl., p. 105, pl. xvii, f. 1, 2; pl. xix, f. 3, 1874.

Pterospermites rugosus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 426, 1872 [1873].

Dakota group: South of Fort Harker, Kansas; Coal Brook, North-west Territory.

Protophyllum Sternbergii Lx. Cret. Fl., p. 101, pl. xvi; pl. xviii, f. 2, 1874; Fl. Dak. Gr., p. 189, pl. xlii, f. 1, 1892.

Pterospermites Sternbergii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873].

Dakota group: Fort Harker, Kansas.

Protophyllum? trilobatum Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876]. [Apparently not afterward recognized.]

Dakota group: Kansas.

Protophyllum undulatum Lx. Fl. Dak. Gr., p. 189, pl. xlii, f. 2, 1892.

Dakota group: Kansas.

Protophyllum sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. xi, f. 46, 47, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island; Nanaimo.

PRUNUS (Tournefort.) Linnaeus. Syst., ed. i, 1735.

Prunus? acutifolia Newby. Fl. Amboy Clays, p. 90, pl. xiv, f. 1, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

Prunus (Amygdalus) antecedens Lx. Fl. Dak. Gr., p. 144, pl. lv, f. 4, 1892.

Dakota group: Kansas.

Prunus caroliniana (Mill.) Ait. Hort. Kew., ed. i, vol. ii, p. 163, 1789.

Prunus caroliniana Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 6, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Prunus cretacea Lx. Am. Journ. Sci., vol. xlvi, p. 102, 1868.

Dakota group: Lancaster County, Nebraska.

Prunus dakotensis Lx. Cret. and Tert. Fl., p. 237, pl. xlvIA, f. 8, 1883.

Fort Union group: Bad Lands, Dakota.

Prunus Parlatorii (Heer) Lx. = *Andromeda Parlatorii*.

Prunus variabilis Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

PSILOTTES Goldenberg. Fl. Sarapontana Foss., heft i, p. 13, 1855.

Psilotites inermis (Newby.) Schimp. Pal. Vég., vol. iii, p. 547, 1874.

Psilotum inerme Newby. Later Extinct Floras, p. 38, 1868.

Fort Union group: Fort Union.

Psilotum inerme Newby. = *Psilotites inermis*.

PTENOSTROBUS Lesquereux. Cret. Fl., p. 114, 1874.

Ptenostrobos nebrascensis Lx. Cret. Fl., p. 114, pl. xxiv, f. 1, 1874.

Dakota group: Winnebago Village, Missouri River.

PTERIS Linnaeus. Gen. Pl., p. 322, 1737.

Pteris affinis Lx. = *Osmunda affinis* = *Asplenium subsimplex*.

Pteris anceps Lx. = *Osmunda affinis* = *Asplenium subsimplex*.

Pteris dakotensis Lx. Fl. Dak. Gr., p. 24, pl. i, f. 2, 3, 1892.

Dakota group: Kansas.

Pteris elegans Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Currant Creek, Oregon.

Pteris erosa Lx. = *Asplenium erosum*.

Pteris (*Oleandra*) *glossopteroides* Dn. Trans. Roy. Soc. Canada, vol. i., sec. iv, p. 24, pl. iv, f. 16, 1882 [1883].

Upper Cretaceous: Protection Island.

Pteris Gardneri Lx. = *Gymnogramma Gardneri*.

Pteris pinnaeformis Heer, Lx. = *Pteris pseudopinnaeformis*.

Pteris pseudopinnaeformis Lx. Tert. Fl., p. 52, pl. iv, f. 3, 4, 1878.

Pteris pinnaeformis Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1871]; *ibid.*, p. 283, 1871 [1872].

Denver group: Golden, Colorado.

Pteris Russellii Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Laramie group: Vermejo Canyon, New Mexico.

Pteris Sitkensis Heer. Fl. Foss. Alask., p. 21, pl. i, f. 7a, 1869.

Eocene?: Near Sitka, Alaska; Mackenzie River.

Pteris subsimplex Lx. = *Asplenium subsimplex*.

Pteris undulata Lx. = *Asplenium subsimplex*.

PTEROCARYA Kunth. Ann. Sci. Nat., 1st ser., vol. ii, p. 345, 1824.

Pterocarya americana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 417, 1873 [1874]; Tert. Fl., p. 290, pl. lviii, f. 3, 1878.

Green River group: Middle Park, Colorado.

Pterocarya retusa Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

PTEROPHYLLUM Brongniart. Prodr. Hist. Veg. Foss., p. 95, 1828.

Pterophyllum? *Haydenii* Lx. = *Podozamites Haydenii*.

Pterophyllum californicum Font. in Diller and Stanton. Bull. Geol. Soc. Am., vol. v, p. 450, 1894. Nomen nudum.

Knoxville beds: Tehama County, California.

PTEROSPERMITES Heer. Fl. Tert. Helv., vol. iii, p. 36, 1859.

Pterospermites cordatus Ward. Bull. U. S. Geol. Surv., no. 37, p. 93, pl. xli, f. 4, 1889.

Fort Union group: Seven-Mile Creek, Montana.

Pterospermites cupanioides (Newby.) Kn. Proc. U. S. Nat. Mus., vol. xvi, p. 35, pl. ii, f. 1, 1893.

Phyllites cupanioides Newby. Later Extinct Floras, p. 74, 1868.

Pterospermites Whitei Ward. Bull. U. S. Geol. Surv., no. 37, p. 94, vol. xvi, f. 5, 6, 1887.

Fort Union group: Glendive? Montana.

Pterospermites dentatus Heer. Fl. Foss. Arct., vol. i, p. 138, pl. xxi, f. 15b; xxiii, f. 6, 7, 1868; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 45, 1887.

Miocene?: Mackenzie River; Upper Kanab Valley, Utah.

Pterospermites grandidentatus Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

Pterospermites Haydenii Lx. = Protophyllum Haydenii.

Pterospermites longeacuminatus Lx. Fl. Dak. Gr., p. 186, pl. lix, f. 3, 1892.

Dakota group: Kansas.

Pterospermites modestus Lx. Fl. Dak. Gr., p. 186, pl. lviii, f. 5, 1892.

Dakota group: Kansas.

Pterospermites minor Ward. Bull. U. S. Geol. Surv., no. 37, p. 95, pl. xlii, f. 1-3, 1887.

Fort Union group: Burns's Ranch, Montana.

Pterospermites multinervis Lx. = Protophyllum multinerve.

Pterospermites quadratus Lx. = Protophyllum quadratum.

Pterospermites rugosus Lx. = Protophyllum rugosum.

Pterospermites spectabilis Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 480, pl. xliii, f. 15b; liii, f. 1-4, 1869; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 27, 1888.

Miocene: Spanish Peak, California.

Pterospermites Sternbergii Lx. = Protophyllum Sternbergii.

Pterospermites Whitei Ward = Pterospermites cupanioides.

Pterospermites sp. Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

Pterospermites sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

Pterospermites sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

PYRUS (Tournefort) Linnæus. Syst., ed. i, 1735.

Pyrus cretacea Newby. Later Extinct Floras, p. 12, 1868.

Dakota group: Kansas.

QUERCINIUM Unger in Endlicher. Gen. Pl., suppl. ii, p. 101.

Quercinium Knowltoni Felix. Zeitschr. d. Deutschen Geolog. Gesell. Jahrg. 1896, p. 250, pl. vi, f. 2, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

QUERCOPHYLLUM Fontaine. Potomac Fl., p. 307, 1889.

Quercophyllum grossedentatum Font. Potomac Fl., p. 307, pl. clvi, f. 9, 1889.

Potomac formation: Near Brooke, Virginia.

Quercophyllum tenuinerve Font. Potomac Fl., p. 308, pl. cxlix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

QUERCUS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Quercus acrodon Lx. = *Quercus Lesquereuxiana*.

Quercus æmulans Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 288, 1871 [1872].

Eocene?: Washakie Station, Wyoming.

Quercus alnoides Lx. Fl. Dak. Gr., p. 54, pl. vii, f. 3, 1892.

Dakota group: Kansas.

Quercus anceps Lx. = *Diospyros ambigua*.

Quercus angustiloba Al. Br. in Ludwig. Palæontogr., vol. viii, p. 103, pl. xxxvi, f. 3, 1861; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 378, 1872 [1873]; Tert. Fl., p. 161, pl. xxi, f. 4, 5, 1878.

Laramie group: Golden, Colorado.

Eolignitic?: Cross Lake, Louisiana?

Quercus antiqua Newby. Later Extinct Floras, p. 26, 1868.

Dakota group?: Banks of Rio Dolores, Utah.

Quercus aquamara (Ward) n. comb.

Hedera aquamara Ward. Bull. U. S. Geol. Surv., no. 37, p. 59, pl. xxvi, f. 7, 1887.

Laramie group: Black Buttes, Wyoming.

Quercus attenuata? Göpp. Lx. = *Quercus viburnifolia*.

Quercus banksiæfolia Newby. Bost. Journ. Nat. Hist., vol. vii, p. 522, 1863.

——: Bellingham Bay, Washington.

Quercus benzoin? Lx. = *Persea Leconteana*.

Quercus bicornis Ward. Bull. U. S. Geol. Surv., no. 37, p. 24, pl. ix, f. 3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Quercus Boweniana Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 6, pl. ii, f. 5, 6, 1878.

Miocene: California.

Quercus Breweri Lx. = *Quercus consimilis* (f. 5-8) and *Q. paucidentata* (f. 9).

Quercus carbonensis Ward. Bull. U. S. Geol. Surv., no. 37, p. 25, pl. ix, f. 6, 1887.

Dryophyllum basidentatum Ward. Op. cit., p. 27, pl. xi, f. 2, 1887.

Laramie?: Carbon, Wyoming.

Quercus castaneopsis Lx. Cret. and Tert. Fl., p. 155, pl. xxviii, f. 10, 1883.

Green River group: Uinta County, formerly but incorrectly called Randolph County, Wyoming.

Quercus castanoides Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Eocene: Green River, Wyoming.

Quercus castanopsis Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Fort Union group: Yellowstone River.

Quercus celastrifolia Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

Quercus chamissonis Heer. Öfversigt k. Vetensk.-Akad. Förhandlingar 1868, p. 64, 1868; Fl. Foss. Alask., p. 33, pl. vi, f. 7, 8, 1869.

Eocene?: Port Graham, Alaska.

Quercus chlorophylla Ung. = *Quercus? chlorophylloides*.

Quercus? chlorophylloides nom. nov.

Quercus chlorophylla Ung. Chlor. Prot., p. 111, pl. xxxi, f. 1, 18—; Lx., Am. Journ. Sci., vol. xlv, p. 206, 1868; Trans. Am. Phil. Soc., vol. xiii, p. 416, pl. xvii, f. 5-7, 1869; Tert. Fl., p. 151, pl. xxi, f. 3, 1878.

Eolignitic: Mississippi.

Denver group: [Locality not mentioned.]

Laramie group: Marshall and Erie, Colorado; Fishers Peak, New Mexico.

[NOTE.—After looking up the original of the European form, as well as many other figures, I am convinced that our leaf is not the same. Our leaf is ovate; the European are more nearly obovate. There is also some doubt as to our leaf belonging to *Quercus*. In absence of more definite information I have changed the name but retained it under *Quercus*.—F. H. K.]

Quercus chrysolepis Leib. forma **montana** Lx. Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.

Miocene: Placer County, California.

Quercus cineroides Lx. Tert. Fl., p. 152, pl. xxi, f. 6, 1878.

—?: Location and formation unknown.

Quercus Cleburni Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874]; Tert. Fl., p. 154, pl. xx, f. 2, 1878. [Of doubtful validity.]

Laramie group: Black Buttes, Wyoming.

Quercus coloradensis Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

Quercus competens Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 370, 1875 [1876]. [Apparently not afterwards referred to by author.]

Montana formation?: Point of Rocks, Wyoming.

Quercus consimilis Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Quercus Breweri Lx. Cret. and Tert. Fl., p. 246, pl. liv, f. 5-8 [not f. 9], 1883.

Miocene: Bridge Creek and John Day Valley, Oregon.

Quercus convexa Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 4, pl. i, f. 13-17, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 5, 6, 1883.

Miocene: Table Mountain, California.

Quercus coriacea Newby. Bost. Journ. Nat. Hist., vol. vii, p. 521, 1863.

—: Bellingham Bay, Washington.

Quercus! crassinervi(s)a? Göpp. Zeitschr. Deutsch. Geol. Ges., vol. iv, p. 491, 1852; Lesquereux, Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 427, pl. K, f. 1, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Quercus Crossii Lx. Proc. U. S. Nat. Mus., vol. x, p. 39, pl. ii, f. 5, 6, 1887.

Denver group: Silver Cliff, Colorado.

Quercus cuneata Newby. Later Extinct Floras, p. 25, 1868.

Dakota group: Blackbird Hill, Nebraska.

Quercus dakotensis Lx. Cret. and Tert. Fl., p. 39, 1883; Fl. Dak. Gr., p. 56, pl. vii, f. 4, 1892.

Dakota group: Kansas.

Quercus Dallii Lx. Proc. U. S. Nat. Mus., vol. v, p. 446, pl. viii, f. 2-5, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Eocene?: North Fork Similkameen River, British Columbia.

Quercus Dawsoni nom. nov.

Quercus platania Heer. Dawson, Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, pl. xi, 1889. [Not *Q. platania* Heer.]

Fort Union group: Near Calgary, and Bow River, Canada.

Quercus Dentoni Lx. Cret. and Tert. Fl., p. 224, pl. xlviii, f. 1, 11, 1883.

Fort Union group: Bad Lands, Dakota.

Montana formation?: Point of Rocks, Wyoming?

Quercus distincta Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 6, pl. ii, f. 7-9, 1878.

Quercus voyana Lx. Op. cit., p. 8, pl. ii, f. 12, 1878.

Miocene: Chalk Bluffs, California.

Quercus doljensis Pilar. Fl. Foss. Susedana, p. 37, pl. vii, f. 14, 1883; Ward, Bull. U. S. Geol. Surv., no. 37, p. 25, pl. ix, f. 4, 5, 1887.

Rhus pseudo-Meriani Lx. Tert. Fl., p. 293, pl. lviii, f. 11, 1878.

Laramie group: Black Buttes and Hodges Pass, Wyoming.

Quercus drymeja Ung. Chlor. Prot., p. 113, pl. xxxii, f. 1-4, 1847; Lx., Tert. Fl., p. 157, pl. xix, f. 14, 1878; Cret. and Tert. Fl., p. 154, pl. xxviii, f. 12 [not p. 245, pl. liv, f. 4], 1883.

Green River group: Florissant, Colorado.

Miocene: Bridge Creek, Oregon.

Quercus drymeja Ung. var.? Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872].

Laramie group? Evanston, Wyoming.

Quercus dubia Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882, [1883].

Tertiary: Tongue River, Wyoming.

Quercus elæna Ung. Chlör. Prot., p. 112, pl. xxxii, f. 4, 1847; Lesquereux, Cret. and Tert. Fl., p. 155, pl. xxviii, f. 11, 13, 1883.

——: Florissant, Colorado.

Quercus elæncoides Lx. Mem. Mus. Comp. Zööl., vol. vi, no. 2, p. 4, pl. i, f. 9-12, 1878.

Miocene: Table Mountain, California.

Green River group: Florissant, Colorado.

Quercus elkoana Lx. = *Carpinus grandis*.

Quercus elliptica Newby. Bost. Journ. Nat. Hist., vol. vii, p. 523, 1863.

——: Bellingham Bay, Washington.

Quercus ellisiana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Tert. Fl., p. 155, pl. xx, f. 4, 5, 6, 7, 8, 1878.

Quercus Pealei Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Kn., Bull. U. S. Geol. Surv., no. 105, p. 53, 1893.

Livingston beds: Hodson coal mine, near Bozeman, Montana.

Laramie group: Head of Fir Canyon, near Bozeman, Montana.

Quercus? ellsworthianus Lx. Cret. Fl., p. 65, pl. vi, f. 7, 1878.

Quercus ellsworthianus Lx. Am. Jour. Sci., vol. xlv, p. 96, 1868.

Laurophyllum ellsworthianum Lx. Fl. Dak. Gr., p. 95, pl. xiii, f. 7, 1892.

Dakota group: Kansas and Nebraska.

Quercus Evansii Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

——: Bellingham Bay, Washington.

Quercus falcata Michx. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

Quercus flexuosa Newby. Bost. Journ. Nat. Hist., vol. vii, p. 521, 1863.

Cretaceous: Bellingham Bay, Washington.

Quercus? fraxinifolia Lx. Tert. Fl., p. 154, pl. xx, f. 3, 1878.

Quercus Laharpi Gaud. Nouv. Mém. Soc. Helv. Sci. Nat., vol. xvii, p. 45, pl. iii, f. 5, 10, 1860; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872].

Livingston beds: Bozeman coal field, Montana.

Eocene?: ?Cherry Creek, Oregon.

Quercus furcinervis Rossm. Lx. = *Quercus furcinervis americana* [pl. liv, f. 1, 2] and *Quercus paucidentata* [pl. liii, f. 8-14].

Quercus furcinervis americana var. nov.

Phyllites furcinervis Rossm. Verst. Braunk. von Altsattle in Böhmen, p. 33, pl. vii, f. 26-31, 1840.

Quercus furcinervis (Rossm.) Ung. Syn. v, Fl. Foss., p. 217, 1845; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1873 [1874]; Cret. and Tert. Fl., p. 244, pl. liv, f. 1, 2, 1883.

Miocene: Bridge Creek, Oregon; Plumas County, California; Cherry Creek, Oregon; Selma, Texas.

Quercus Furuhielmi Heer. Öfversigt k. Vetensk.-Akad. Förhandlgar., 1868, p. 64, 1868; Fl. Foss. Alask., p. 32, pl. v, f. 10; pl. vi, f. 1, 2, 1869.

Eocene?: Port Graham, Alaska.

Quercus Gaudini Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]; Proc. U. S. Nat. Mus., vol. x, p. 39, pl. ii, f. 7, 8, 1887.

—?: Warm Spring Canyon; Bellingham Bay; Upper Kanab Valley, Utah.

Quercus glascoena Lx. Fl. Dak. Gr., p. 55, pl. vi, f. 6, 1892.

Dakota group: Kansas.

Quercus Godeti? Heer. Fl. Tert. Helv., vol. ii, p. 50, pl. lxxviii, f. 10, 11, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Tert. Fl., p. 153, pl. xx, f. 1, 1878.

Livingston beds: Bozeman coal field, Montana.

Quercus Goepperti Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 7, pl. ii, f. 11, 1878.

Miocene: Chalk Bluffs, California.

Quercus goldianus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1873 [1874]. [Not recognized by its author after first description.]

Denver group?: Golden, Colorado.

Quercus gracilis Newby. = *Dryophyllum subfalcatum*.

Quercus Haidingeri Ett. Foss. Fl. v. Wien., p. 12, pl. ii, f. 1, 1851; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 156, pl. xx, f. 9, 10, 1878.

Denver group?: Golden, Colorado.

—?: Locality of American types unknown.

Quercus Haydeni Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 205, 1869.

Quercus Haydenii Lx. Tert. Fl., p. 157, pl. xix, f. 10, 1878.

Laramie: Rock Creek, Laramie Plains, Wyoming.

Quercus hexagona Lx. Am. Journ. Sci., vol. xlvi, p. 95, 1868; Cret. Fl., p. 64, pl. v, f. 8, 1874; Fl. Dak. Gr., p. 56, pl. vii, f. 5, 1892.

Dakota group: Cass County, Nebraska; Delphos, Kansas.

Quercus (Dryophyllum) hieracifolia (Deb.) Hos. and v. d. Marek, Fl. d. Westf. Cret. Form., p. 166, pl. 31, f. 85–88, 1880; Lx., Fl. Dak. Gr., p. 58, pl. iii, f. 15, 1892.

Dakota group: Kansas.

Quercus Holmesii Lx. Fl. Dak. Gr., p. 58, 1892.

Dryophyllum (Quercus) salicifolium * Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 340, pl. viii, f. 2, 1874 [1876]. [*Name preoccupied by *Q. salicifolia* Newby., q. v.]

Dryophyllum (Quercus) Holmesii Lx. Cret. and Tert. Fl., p. 38, pl. iv, f. 8, 1883.

Upper Cretaceous: Port McNeill, Vancouver.

Dakota group?: San Juan River, Southwestern Colorado.

Quercus horniana Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. v, f. 6, 1888.

Miocene: John Day Valley, Oregon.

Bull. 152—13

Quercus (Dryophyllum) Hosiana Lx. Fl. Dak. Gr., p. 57, pl. iii, f. 14, 1892.

Dakota group: Kansas.

Quercus idahoensis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 729, pl. cii, f. 4, 1898.

Payette formation: Marsh, Idaho.

Quercus ilicoides? Heer. Lesquereux. = *Ilix dissimilis*.

Quercus imbricaria Michx., **fossilis** Lx., Proc. U. S. Nat. Mus., vol. x, p. 39, 1887.

Pleistocene?: Bridgeton, New Jersey.

Quercus Johnstrupi Heer? Fl. Foss. Aret., vol. vii, p. 24, pl. lvi, f. 7-12a, 1883; Newby., Fl. Amboy Clays, p. 69, pl. xix, f. 7. 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Quercus kanseana (Lx.) n. comb.

Hamamelites kansaseana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, pl. vii, f. 4, 1874 [1876].

Hamamelites kansaseanus Lx. Cret. and Tert. Fl., p. 70, pl. iv, f. 5, 1883.

Alnus kanseana Lx. Cret. Fl., p. 62, pl. xxx, f. 8, 1878.

Dakota group: Kansas.

Quercus (Dryophyllum) latifolia Lx. Fl. Dak. Gr., p. 58, 1892.

Dryophyllum (Quercus) latifolium Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 340, pl. vi., f. 1, 1874 [1876]; Cret. and Tert. Fl., p. 37, pl. iv, f. 1, 2, 1883.

Dakota group: Kansas.

Quercus Laharpi Gaud. Lx. = *Quercus?* *fraxinifolia*.

Quercus laurifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Fort Union group: Fort Berthold, North Dakota.

Quercus Lesquereuxiana nom. nov.

*Quercus acrodon** Lx. Am. Journ. Sci., vol. xlv, 2d ser, p. 205, 1869; Tert. Fl., p. 158, pl. xix, f. 11-13, 1878.

[**Q. acrodon* Lx., 1868 antedated by *Q. acrodon* Massal., 1853.]

Laramie group?: Rock Creek, Laramie Plains, Wyoming.

Quercus lonchitis Ung. Gen. et Sp. Pl. Foss., p. 403, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 6, 1871 [1872]; Proc. U. S. Nat. Mus., vol. xi, p. 22, 1888.

Eocene?: Green River, Wyoming.

Miocene: Cherry Creek, Oregon.

Quercus Lyellii Heer. Phil. Trans., vol. clii, pt. 2, p. 1058, pl. lxiii, f. 2-9; lxiv, f. 1-4; lxv, f. 12b; lxvi, f. 1, 2; lxviii, f. 4, 5, 1862; Lx., Am. Journ. Sci., vol. xlv, p. 206, 1868; Trans. Am. Phil. Soc., vol. xiii, p. 415, pl. xvii, f. 1-3, 1869.

Eolignitic: Mississippi.

Quercus mediterranea Ung. Chlor. Prot., p. 114, pl. xxxii f. 5-9, 1847; Lx., Cret. and Tert. Fl., p. 153, pl. xxviii, f. 9, 1883. •

Green River group: Florissant, Colorado.

Quercus minor (Marsh.) Sargent.

Quercus obtusiloba Michx. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895.

Pleistocene: Don River, Canada.

Quercus Moorii Lx. Trans. Am. Phil. Soc., vol. xiii, p. 415, pl. xvi, f. 1-3, 1869.

Eolignitic: Mississippi.

Eocene: Lassen County, California.

Quercus morrisoniana Lx. Cret. and Tert. Fl., p. 40, pl. xvii, f. 1, 2, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiii, f. 11, 12, 1897.

Dakota group: Morrison, Colorado.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Quercus Mudgii Lx. = *Protophyllum* Mudgii.

Quercus multinervis Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

——: Nanaimo, Vancouver Island.

Quercus mystifolia Willd. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 3, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Quercus negundoides Lx. Ann. Rept. U. S. Geol. and Geog. Surv. Terr., p. 292, 1871 [1872]; Tert. Fl., p. 161, pl. xxi, f. 2, 1878.

Laramie group: Evanston, Wyoming.

Quercus neriifolia Al. Br. Unger, Gen. et Sp. Pl. Foss., p. 403, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 413, 1873 [1874]; Tert. Fl., p. 150, pl. xix, f. 4, 5, 1878. [Identification very doubtful.]

Laramie group: Raton Mountains, New Mexico.

——?: Pikes Peak, Colorado.

Quercus nevadensis Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 5, pl. ii, f. 3, 4, 1878.

Quercus Olafseni Heer. Lesquereux, Cret. and Tert. Fl., p. 245, pl. liv, f. 3, 1883.

Miocene: Chalk Bluffs, California.

Quercus ? Novæ-Cæsareæ Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiii, f. 9, 10, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Quercus obtusiloba Mx. = *Quercus minor*.

Quercus ? (Dryophyllum) occidentalis (Dn.) n. comb.

Dryophyllum occidentale Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 58, pl. vii, f. 17, 18, 1893 [1894].

Dryophyllum neillianum Dn. Op. cit., p. 58, pl. vii, f. 19, 1893 [1894].

Dryophyllum elongatum Dn. Op. cit., p. 58, pl. vii, f. 20, 1893 [1894].

Dryophyllum sp., Dn. Op. cit., p. 58, pl. xii, f. 59, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

Quercus Olafseni Heer. Fl. Foss. Arct., vol. i, p. 109, pl. x, f. 5; pl. xi, f. 7; pl. xlvi, f. 10; p. 138, pl. xxii, f. 17, 1868; Lx., Cret. and Tert. Fl., p. 224, pl. xlvi, f. 4, 1883.

Eocene?: Cherry Creek, Oregon; Lassen County, California.

Miocene?: Table Mountain, California; Mackenzie River.

Fort Union group: Bad Lands, Dakota.

Quercus Olafseni Heer. Lx. [Cret. and Tert. Fl., p. 245, pl. liv, f. 3] = *Quercus nevadensis*.

Quercus Osbornii Lx. Cret. and Tert. Fl., p. 154, pl. xxxviii, f. 17, 1883.

Green River group: Florissant, Colorado.

Quercus pandurata Heer. Öfversigt k. Vetensk.-Akad. Förhandlingar. 1868, p. 64, 1868; Fl. Foss. Alask., p. 33, pl. vi, f. 6, 1869.

Eocene?: Port Graham, Alaska.

Quercus paucidentata Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Quercus furcinervis Rossm. Lesquereux, Cret. and Tert. Fl., p. 244, pl. liii, f. 8-14 [not pl. liv, f. 1-2], 1883.

Quercus Breweri Lx. Cret. and Tert. Fl., p. 246, pl. liv, f. 9 [not f. 5-8], 1883.

——: Bridge Creek and John Day Valley, Oregon.

Quercus payettensis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 730, pl. cii, f. 9, 1898.

Payette formation: Jackass Creek, Boise County, Idaho.

Quercus Pealei Lx. = *Quercus ellisiana*.

Quercus platania Heer Dawson = *Quercus Dawsoni*.

Quercus platania Heer Lx. = *Platanus cordata*.

Quercus platania var. *rotundifolia* Lx. = *Dombeyopsis platanoides*.

Quercus platinervis Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Nanaimo, Vancouver Island.

Quercus poranoides Lx. Cret. Fl., p. 66, pl. xxx, f. 9, 1874.

Dakota group: Kansas.

Quercus pseudo-alnus Ett. Abhandl. d. k. k. geol. Reichsanstalt, vol. i, abt. iii, p. 5, pl. i, f. 7, 1852; Lx., Cret. and Tert. Fl., p. 244, pl. liii, f. 1-7, 1883.

Miocene: John Day Valley, Oregon.

Quercus pseudo-castanea Göpp. in Dunker et Meyer. Palæontogr., ii, pl. xxxv, f. 1, 1853; Heer, Öfversigt k. Vetensk.-Akad. Förhandlingar. 1868, p. 64, 1868; Fl. Foss. Alask., p. 32, pl. vi, f. 3-5, 1869.

Eocene?: Port Graham, Alaska.

Quercus pseudo-chrysophylla Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 60, Appen., 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

Quercus pseudo-lyrata Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 8, pl. ii, f. 1, 2, 1878; Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. x, f. 1, 1888.

Miocene?: California.?

Miocene: John Day Valley, Oregon.

Quercus pseudo-lyrata acutiloba Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. xi, f. 1, 1888.

Miocene: John Day Valley, Oregon.

Quercus pseudo-lyrata angustiloba Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. xi, f. 2, 1888.

Miocene: John Day Valley, Oregon.

Quercus pseudo-lyrata brevifolia Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. x, f. 2, 1888.

Miocene: John Day Valley, Oregon.

Quercus pseudo-lyrata latifolia Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. xii, f. 1, 1888.

Miocene: John Day Valley, Oregon.

Quercus pseudo-lyrata obtusiloba Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. x, f. 3, 1888.

Miocene: John Day Valley, Oregon.

Quercus pyrifolia Lx. Cret. and Tert. Fl., p. 154, pl. xxviii, f. 14, 1883.
Green River group: Florissant, Colorado.

Quercus retracta Lx. Trans. Am. Phil. Soc., vol. xii, p. 416, pl. xvi, f. 4, 5, 1869.

Eolignitic: Mississippi.

Quercus (Dryophyllum) rhamnoides Lx. Fl. Dak. Gr., p. 57, p. xlviii, f. 4, 1892.

Dakota group: Kansas.

Quercus Saffordi Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; 2d Rept. of Geol. Recon. of Ark., p. 319, pl. vi, f. 3, 1860; Geol. Tenn., p. 427, pl. K, f. 2a, 2b, 2c, 1869; Proc. U. S. Nat. Mus., vol. xi, p. 13, pl. v, f. 1-3, 1888.

Pleistocene?: Somerville, Fayette County, Tennessee.

Quercus salicifolia Newby. Later Extinct Floras, p. 24, 1868.

Dakota group: Blackbird Hill, Nebraska.

Quercus semialatus Lx. = *Anisophyllum semialatum*.

Quercus semi-elliptica Göpp. Lx. = *Planera longifolia*.

Quercus serra Ung. Chlor. Prot., p. 109, pl. xxx, f. 5-7, 1847; Lx., Cret. and Tert. Fl., p. 153, 1883.

Green River group: Florissant, Colorado.

Quercus simplex Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Quercus simulata Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 728, pl. ci, f. 3, 4; cii, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

Quercus sinuata Newby. Later Extinct Floras, p. 27, 1868.

Dakota group: Banks of Rio Dolores, Utah.

Quercus spurio-ilex Kn. in Lx. Fl. Dak. Gr., p. 53, pl. xlviii, f. 3, 1892.

Dakota group: Kansas.

Quercus Steenstrupiana ? Heer. Fl. Foss. Arct., vol. i, p. 109, pl. xi, f. 5; xlv, f. 8, 9, 1868.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

Quercus stramineus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 378, 1872 [1873]; Tert. Fl., p. 151, pl. xix, f. 6, 7, 1878.

Laramie group: Golden, Colorado.

Quercus Sullyi Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Fort Union group: Fort Berthold, North Dakota.

Quercus suspecta Lx. Fl. Dak. Gr., p. 52, pl. xlvii, f. 7; pl. xlviii, f. 1, 2, 1892.

Dakota group: Kansas.

Quercus transgressus Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 59, Appen., 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

Quercus triangularis Göpp. Lx. = *Quercus viburnifolia*.

Quercus valdensis Heer. Fl. Tert. Helv., vol. ii, p. 49, pl. lxxviii, f. 15, 1856; Lx., Tert. Fl., p. 153, pl. xix, f. 8, 1878.

Denver group?: Rock Creek, Laramie Plains, Wyoming.

Quercus viburnifolia Lx. Tert. Fl., p. 159, pl. xx, f. 11, 12, 1878.

Quercus triangularis Göpp. [Ex. p.]. In Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873].

Quercus attenuata? Göpp. In Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 398, 1873 [1874].

Denver group: Golden, Colorado.

Laramie group: Sand Creek, Colorado; Black Buttes, Wyoming.

Quercus victoriæ Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 27, 1882 [1883].

Upper Cretaceous: Newcastle Island, Nanaimo, Protection Island, Port McNeill, Vancouver Island.

Quercus virens Mx. = *Quercus virginiana*.

Quercus virginiana Miller. Dict., ed. viii, no. 16, 1768.

Quercus virens Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 364, 1859.

Pleistocene: Banks of Mississippi, near Columbus, Kentucky.

Quercus Voyana Lx. = *Quercus distincta*.

Quercus Wardiana Lx. Fl. Dak. Gr., p. 53, pl. vii, f. 1, 1892.

Dakota group: Kansas.

Quercus Whitei Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

Quercus wyomingiana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400. 1872 [1873]. [Not regarded by its author after first mention.]

Laramie: Black Buttes, Wyoming.

Quercus cf. cuspidata (Rossm.) Ung. Syn. Fl. Foss., p. 217, 1845. Lesquereux, Proc. U. S. Nat. Mus., vol. xi, p. 12, 1888.

Phyllites cuspidatus Rossm. Verst. Braunk. von Altsattle in Böhmen., p. 36, pl. ix, f. 38, 39, 1840.

Eolignitic: Boaz, Graves County, Kentucky.

Quercus sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: South Amboy, New Jersey.

Quercus sp., Dn. Geol. Surv. Canada, Rept. of Prog. for 1872-73. Appen. V, p. 68, 1873.

Upper Cretaceous: Hornby Island, British Columbia.

Cretaceous: Vancouver Island, British Columbia.

Quercus sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 27, 1886 [1887].

Upper Laramie group: Great Valley.

Quercus? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 28, 1890.

Eocene?: Similkameen Valley, British Columbia.

Quercus sp., Dn. Geol. Surv. Canada, Rept. Prog. for 1879-80. p. 54A, 1881.

Tertiary?: Roche Percée, Souris River.

Quercus sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Quercus? sp., Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiv, f. 9, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Quercus sp., Kn. Bull. Geol. Soc. Am., vol. viii, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

Quercus? sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 730, 1898.

Payette formation: Marsh, Idaho.

RHAMNACINIUM Felix. Zeitschr. d. Deutschen geol. Gesell., vol. xlvi, p. 89, 1894.

Rhamnacinium radiatum Felix. Zeitschr. d. Deutschen geol. Gesell. Jahr. 1896, p. 252, pl. vi, f. 3, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

RHAMNITES Forbes. Quat. Journ. Geol. Soc. Lond., vol. vii, p. 103, 1851.

Rhamnites apiculatus Lx. Fl. Dak. Gr., p. 171, pl. xxxvii, f. 8-13, 1892.

Dakota group: Kansas.

Rhamnites concinnus Newby. Later Extinct Floras, p. 50, 1868.

Rhamnus concinnus (Newby) Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A., p. 330, 1875.

Fort Union group: Fort Union, North Dakota.

Canadian upper Laramie: Porcupine Creek.

Rhamnites minor Hollick in Newby. Fl. Amboy Clays, p. 106, pl. xlii, f. 36, 1895 [1896].

Amboy clay: New Jersey?

Rhamnus acuminatifolius Web. Palæontogr., vol. ii, p. 206, 1853;

Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873].

[Not afterwards mentioned by Lesquereux.]

——?: Six miles above Spring Canyon, Montana; Golden, Colorado.

Rhamnus? *acuta* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 98, pl. xli, f. 6; pl. xlv, f. 13c, 1882; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxvii, f. 6, 1894.

Cretaceous: Lloyds Neck, Long Island.

Rhamnus alaternoides Heer. Fl. Tert. Helv., vol. iii, p. 78, pl. cxxiii, f. 21-23, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1873 [1874]; Tert. Fl., p. 278, pl. lii, f. 11, 11a, 1878.

Denver group: Golden Colorado.

Rhamnus Cleburni Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]; Tert. Fl., p. 280, pl. liii, f. 1-3, 1878.

Denver group: Golden Colorado.

Laramie group?: Black Buttes, Wyoming?; Upper Kanab Valley, Utah?: Cross Lake, Louisiana?

Rhamnus Cleburni Lx., var. — Lx. Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Eocene?: Cherry Creek, Oregon.

Rhamnus concinnus Newby. Dn. = *Rhamnites concinnus*.

Rhamnus crenatus Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 55, 1888.

Denver group: Golden, Colorado.

Rhamnus Dechenii Web. Palæontogr., vol. ii, p. 204, pl. xxiii, f. 2, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873]; Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Laramie group: Black Buttes, Wyoming; Golden, Colorado.

Eocene?: Cherry Creek, Oregon.

Rhamnus deformatus Lx. Cret. and Tert. Fl., p. 126, pl. xx, f. 6, 1883.

Denver group: Golden, Colorado.

Rhamnus deletus? Heer. Fl. Tert. Helv., vol. iii, p. 79, pl. cxxiii, f. 19-23, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 15, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Raton Mountains, New Mexico.

Rhamnus elegans Newby. Later Extinct Floras, p. 49, 1868.

Fort Union group?: Belmont, Colorado.

Rhamnus? discolor Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]; Tert. Fl., p. 280, pl. lii, f. 17, 1878. [See *Apeibopsis discolor*.]

Laramie group: Sand Creek, Colorado?; Black Buttes, Wyoming.

Rhamnus Eridani Ung. Gen. et Sp. Pl. Foss., p. 465, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 25, 1888.

Eolignitic: Cross Lake, Louisiana.

Rhamnus Fischeri Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 15, 1871 [1872]. [Not afterwards referred to by its author.]

Laramie group?: Fischers Peak, New Mexico.

Rhamnus Gaudini Heer. Fl. Tert. Helv., vol. iii, p. 79, pl. cxxiv, f. 4-15; cxxv, f. 1, 7, 13, 1859; Newby., Bost. Journ. Nat. Hist., vol. vii, p. 520, 1863.

——: Birch Bay, Washington.

Rhamnus goldianus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]; Tert. Fl., p. 281, pl. liii, f. 4-8, 1878.

Berchemia multinervis Ward. Bull. U. S. Geol. Surv., no. 37, p. 73, pl. xxxiii, f. 2, 1887.

Denver group: Golden and Silver Cliff, Colorado, etc.

Rhamnus goldianus latior Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]. [Apparently not afterwards referred to by its author.]

——? : Golden, Colorado.

Rhamnus inæqualis Lx. = *Diospyros brachycephala*.

Rhamnus inæquilateralis Lx. Fl. Dak. Gr., p. 170, pl. xxxvii, f. 4-7, 1892.

Dakota group: Kansas.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Rhamnus intermedius Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 286, 1871 [1872]; Tert. Fl., p. 282, pl. liv, f. 3, 1878.

Green River group: Washakie Station, Wyoming.

Denver beds?: Golden, Colorado.

Laramie group: Raton Pass, New Mexico?

Rhamnus marginatus Lx. Geol. Rept. Ark., vol. ii, p. 319, pl. vi, f. 1, 1860; Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xxii, f. 3-5, 1869.

Eolignitic: Mississippi.

Rhamnus Meriani? Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1873 [1874]. [Not afterwards recognized.]

Laramie group?: Black Buttes, Wyoming.

Rhamnus Mudgei Lx. Fl. Dak. Gr., p. 169, pl. xxxvii, f. 2, 3, 1892.

Dakota group: Kansas.

Rhamnus notatus? Sap. Ann. d. Sci. Nat., 5th ser. bot., vol. viii, p. 108, pl. xi, f. 8, 1867; Lx., Cret and Tert. Fl., p. 189, pl. xxxviii, f. 15, 1883.

Green River group: Florissant, Colorado.

Rhamnus obovatus Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 207, 1868; Tert. Fl., p. 281, pl. liv, f. 1, 2, 1878.

Laramie group?: Purgatory Canyon, New Mexico; Golden, Colorado?; Evanston, Wyoming?

Eocene?: Cherry Creek, Oregon.

Rhamnus oleæfolius Lx. Cret. and Tert. Fl., p. 189, pl. xxxviii, f. 14, 1883.

Green River group: Florissant, Colorado.

Rhamnus parvifolius Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Fort Union group: Valley of the Yellowstone, Montana.

Rhamnus prunifolius Lx. Cret. and Tert. Fl., p. 85, 1883; Fl. Dak. Gr., p. 169, pl. xxxv, f. 14, 1892.

Dakota group: Kansas.

Rhamnus rectinervis Heer. Fl. Tert. Helv., vol. iii, p. 80, pl. cxxv, f. 2-6, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 279, pl. lii, f. 12-15, 1878.

Laramie group: Golden, Colorado; Black Buttes, Wyoming.

Laramie group?: Evanston, Wyoming; Bozeman coal field, Montana?

Rhamnus revoluta Lx. Fl. Dak. Gr., p. 171, pl. lxxv, f. 5, 1892.

Dakota group: Kansas.

Rhamnus Rossmassleri Ung. Gen. et Sp. Pl. Foss., p. 464, 1850; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. iii, f. 5, 1892.

Cretaceous: Tottenville, Staten Island, New York.

Rhamnus Rossmässleri Ung. Lx. = *Juglans rhamnoides*.

Rhamnus similis Lx. Fl. Dak. Gr., p. 168, pl. xxxv, f. 12, 13, 1892.

Dakota group: Kansas.

Rhamnus salicifolius Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1868; Tert. Fl., p. 282, pl. liii, f. 9, 10, 1878.

Laramie group: Marshalls and Coal Creek, Colorado; Black Buttes, Wyoming.

Rhamnus tenax Lx. Am. Journ. Sci., vol. xlvi, p. 101, 1868; Cret. Fl., p. 109, pl. xxi, f. 4, 1874; Fl. Dak. Gr., p. 170, pl. xxxviii, f. 6, 1892.

Dakota group: Southern Kansas.

Rhamnus sp., Dn. Rept. Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignite tertiary: Great Valley.

Rhizocaulon gracile Lx. = *Phyllites improbatus*.

RHUS (Tournefort.) Linnæus. Gen., ed. i, p. 84, 1737.

Rhus acuminata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 8, 1871 [1872]; Cret. and Tert. Fl., p. 194, pl. xlii, f. 14-17, 1883.

Green River group: Florissant and Green River, Colorado.

Rhus bella? Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 482, pl. lvi, f. 3-5 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——?: Six miles above Spring Canyon, Montana.

Rhus Bendirei Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. ix, f. 2, 1888.

Miocene: John Day Valley, Oregon.

Rhus Boweniana Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 29, pl. ix, f. 8, 9, 1878.

Miocene: Chalk Bluffs? California.

Rhus cassioides Lx. Cret. and Tert. Fl., p. 193, pl. xli, f. 11, 1883.

Green River group: Florissant, Colorado.

Rhus coriarioides Lx. Cret. and Tert. Fl., p. 193, pl. xli, f. 3, 1883.

Green River group: Florissant, Colorado.

Rhus deleta Heer. Fl. Tert. Helv., vol. iii, p. 83, pl. cxxvii, f. 8; pl. cliv, f. 26, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Laramie group?: Evanston, Wyoming.

Rhus dispersa Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 32, pl. i, f. 23, 1878.

Miocene: Table Mountain, California.

Rhus? drymeja Lx. = *Myrica drymeja*.

Rhus Evansii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 291, pl. i, f. 4; pl. lviii, f. 5-9, 1878.

Laramie group?: Evanston, Wyoming.

Rhus fraterna Lx. Cret. and Tert. Fl., p. 192, pl. xli, f. 1, 2, 1883.

Green River group: Florissant, Colorado.

Rhus frigida Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 227, pl. ix, f. 6, 1894.

Eocene?: Herendeen Bay, Alaska.

Rhus Haydenii Lx. = *Weinmannia Haydenii*.

Rhus Heufleri Heer. Fl. Tert. Helv., vol. iii, p. 85, pl. cxxvii, f. 3-6, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 26, 1888.

Miocene?: Corral Hollow, California.

Rhus Hilliæ Lx. Cret. and Tert. Fl., p. 194, pl. xli, f. 12-15, 1883.

Green River group: Florissant, Colorado.

Rhus membranacea Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 369, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 306, 1874 [1876]; Tert. Fl., p. 292, pl. lxiv, f. 6, 7, 1878.

Montana formation?: Point of Rocks, Wyoming.

Rhus metopioides Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 31, pl. viii, f. 12, 13, 1878.

Miocene: Table Mountain, California.

Rhus mixta Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 30, pl. ix, f. 13, 1878.

Miocene: Chalk Bluffs, California.

Rhus myricæfolia Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 31, pl. i, f. 5-8, 1878.

Miocene: Chalk Bluffs, California.

Rhus nervosa Newby. Later Extinct Floras, p. 53, 1868.

Fort Union group: Fort Union, North Dakota.

Rhus payettensis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 733, pl. ci, f. 6, 7, 1898.

Payette formation: Marsh, Idaho.

Rhus Powelliana Lx. Fl. Dak. Gr., p. 155, pl. lvi, f. 4, 5, 1892.

Dakota group: Kansas.

Rhus psuedo-Meriani Lx. = *Quercus doljensis*.

Rhus rosæfolia Lx. Tert. Fl., p. 293, pl. xlii, f. 7-9, 1878.

Weinmannia rosæfolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874].

Green River group: Near Florissant, Colorado.

Rhus subrhomboidalis Lx. Cret. and Tert. Fl., p. 195, pl. xli, f. 16-19, 1883.

Green River group: Florissant, Colorado.

Rhus trifolioides Lx. Cret. and Tert. Fl., p. 196, 1883.

Green River group: Florissant, Colorado.

Rhus typhinoides Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 29, pl. ix, f. 1-6, 1878.

Miocene: Table Mountain, California.

Rhus Uddeni Lx. Fl. Dak. Gr., p. 154, pl. lvii, f. 2, 1892.

Dakota group: Kansas.

Cheyenne sandstone: Belvidere, Kansas.

Rhus vexans Lx. Cret. and Tert. Fl., p. 195, pl. xli, f. 20, 1883.

Green River group: Florissant, Colorado.

Rhus? Westii Kn. in Lx. Fl. Dak. Gr., p. 154, pl. xxxviii, f. 9, 10, 1892.

Dakota group: Kansas.

Rhus Winchellii Lx. Cret. and Tert. Fl., p. 236, 1883.

Fort Union group: Yellowstone Valley.

Rhus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

Rhus? sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

ROGERSIA Fontaine. Potomac Fl., p. 287, 1889.

Rogersia angustifolia Font. Potomac Fl., p. 288, pl. cxliii, f. 2; cxlix, f. 4, 8; cl, f. 2-7, 1889.

Potomac formation: Fredericksburg, Virginia.

Rogersia longifolia Font. Potomac Fl., p. 287, pl. cxxxix, f. 6; cxliv, f. 2; cl, f. 1; cliv, f. 1, 2, 1889.

Potomac formation: Kankeys, near Dutch Gap Canal, and Fredericksburg, Virginia.

ROSA Tournefort. Ex Linnæus, Syst., ed. i, p. 1735.

Rosa Hilliæ Lx. Cret. and Tert. Fl., p. 199, pl. xl, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

ROSELLINITES (De Not.) Meschinelli, Sylloge Fung. Foss., p. 14, 1892.

Rosellinites lapideus (Lx.) n. comb.

Sphærites lapideus (Lx.) Meschinelli. Sylloge Fung. Foss., p. 30, 1892.

Spheria lapidea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 34, pl. i, f. 3, 1878.

Laramie group: Raton Mountains, Colorado.

SABAL Adanson. Fam. Pl., vol. ii, p. 495, 1763.

Sabal Campbelli Newby. = Sabalites Campbelli.

Sabal communis Lx. = Flabellaria eocenica.

Sabal goldiana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]. [Not afterwards referred to by Lesquereux. Same as *Sabalites Campbelli*?]

———?: Golden, Colorado.

Sabal Grayana Lx. = *Sabalites Grayanus*.

Sabal imperialis Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vi, f. 23-23b, 1882 [1883]; op. cit., vol. xi, sec. iv, p. 57, pl. xiv, f. 61, 1893 [1894].

Sabal sp. Newby. Bost. Journ. Nat. Hist., vol. vii, p. 515, 1863.

Upper Cretaceous: Nanaimo; Port McNeill.

Sabal major? (Ung.) Heer. Fl. Tert. Helv., vol. i, p. 88, pl. xxxv; pl. xxxvi, f. 1, 2, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]. [Not afterwards recognized. Probably referred to *Sabalites Campbelli*.]

Flabellaria major Ung. Chlor. Prot., p. 42, pl. xiv, f. 2, 1842.

Eocene?: Head of Snake River, Yellowstone National Park.

Sabal Powellii Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene: Green River, Wyoming.

Sabal sp., Newby. = *Sabal imperialis*.

SABALITES Saporta. Études ii; Ann. d. Sci. Nat., 5th ser., vol. iii, p. 77, 1865.

Sabalites Campbelli (Newby.) Lx. Tert. Fl., p. 113, 1878.

Sabal Campbelli Newby. Bost. Journ. Nat. Hist., vol. vii, p. 515, 1863; Later Extinct Floras, p. 41, 1868.

Denver group: Golden, Colorado.

Fort Union group: Yellowstone River, Montana.

Laramie group: Raton Mountains, and Gehrungs, Colorado; Jack Buttes, Wyoming.

———?: Vancouver, British Columbia, etc.

Sabalites fructifer Lx. ex. p. Tert. Fl., p. 114, pl. xi, f. 3, 3a, 1878.

Flabellaria? fructifera Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874].

Denver group: Golden, Colorado.

Sabalites fructifer Lx. [Tert. Fl., pl. xi, fig. 3a and fruit on fig. 3] = *Nyssa? racemosa*.

Sabalites Grayanus Lx. Tert. Fl., p. 112, pl. xii, f. 1, 2, 1878.

Sabal Grayana Lx. Trans. Am. Phil. Soc., vol. xiii, p. 412, pl. xiv, f. 4-6, 1869.

Eolignitic: Mississippi and Arkansas.

Laramie group: Golden, Colorado; Point of Rocks, Wyoming.

———?: Pleasant Park, California.

SAGENOPTERIS Presl. In Sternberg Vers., vol. ii, p. 164, 1838.

Sagenopteris elliptica Font. Potomac Fl., p. 149, pl. xxvii, f. 9, 11-17, 1889.

Potomac formation: Near Potomac Run and Kankeys, Virginia; Baltimore, Md.

Sagenopteris latifolia Font. Potomac Fl., p. 148, pl. xxvii, f. 10, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Horsetown beds: Shasta County, California.

Sagenopteris Mantelli (Dunk.) Schenk. Deutsch. Weald. Fl., Palaeontogr., vol. xix p. 222, 1871; Font., in Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

Sagenopteris virginensis Font. Potomac Fl., p. 150, pl. cxxxviii, f. 13; cxxxix, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Sagenopteris sp., Font in Diller and Stanton. Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

SAGITTARIA Ruppius. Ex Linnæus. Syst., ed. i, 1735.

Sagittaria Victor-Masoni Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 354, pl. iii, f. 5, 1895.

Potomac formation: Mount Vernon, Virginia.

Sagittaria pulchella Heer. Fl. Foss. Alask., p. 25, pl. i, f. 15, 1869.

Eocene?: Alaska.

Sagittaria n. sp.? Lx. Proc. U. S. Nat. Mus., vol. x, p. 37, 1887.

Eocene?: Sitka, Alaska.

SALICIPHYLLUM Fontaine. Potomac Fl., p. 302, 1889.

Saliciphyllum ellipticum Font. Potomac Fl., p. 303, pl. cxlvi, f. 2, 4; cl, f. 8; clxiii, f. 5; clxvi, f. 2, 1889.

Potomac formation: near Dutch Gap Canal, Fredericksburg, and near Brooke, Virginia.

Saliciphyllum longifolium Font. Potomac Fl., p. 302, pl. cl, f. 12, 1889.

Potomac formation: near Potomac Run, Virginia.

Saliciphyllum parvifolium Font. Potomac Fl., p. 303, pl. clxxii, f. 5, 1889.

Potomac formation: Baltimore, Maryland.

Salisburia adiantoides Ung.=Ginkgo adiantoides.

Salisburia biternata Lx.=Ginkgo biternata.

Salisburia (Ginkgo) **lepida** Heer. Dn.=Ginkgo lepida.

Salisburia nana Dn.=Ginkgo nana.

Salisburia pusilla Dn.=Ginkgo pusilla.

Salisburia (Ginkgo) **sibirica** Heer Dn.=Ginkgo sibirica.

Salisburia, nuts of, Dn.=Ginkgo sp.

Salisburia, nutlets of, Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Lower Laramie group: Canada.

SALIX (Tournefort.) Linnæus. Syst., ed. i, 1735.

Salix amygdalæfolia Lx. Cret. and Tert. Fl., p. 156, pl. xxxi, f. 1, 2, 1883.

Green River group: Florissant, Colorado.

Miocene: John Day Valley, Oregon.

Salix angusta Al. Br. In Buckl. Geol.; also in Stizenberger Verst., p. 77, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 168, pl. xxii, f. 4, 5, 1878.

Green River group: Green River Station, Wyoming.

Tertiary: Montana, Wyoming, Kentucky, California, etc.

Salix californica Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 10, pl. i, f. 18-20, 1878.

Miocene: Table Mountain, California.

Salix cuneata Newby. Later Extinct Floras, p. 21, 1868.

Dakota group: Mouth of Big Sioux, Nebraska.

Salix deleta Lx. Fl. Dak. Gr., p. 49, pl. iii, f. 8, 1892.

Dakota group: Kansas.

Salix densinervis Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 427, pl. K, f. 9, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Salix elliptica Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 10, pl. i, f. 22, 1878.

Miocene: Chalk Bluffs, California.

Salix elongata O. Web. Palaeontogr., vol. ii, p. 177, pl. xix, f. 10, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Tert. Fl., p. 169, pl. xxii, f. 6, 7, 1878.

Green River group: Elko Station, Nevada.

Salix Engelhardti Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. viii, f. 2, 1888.

Miocene: John Day Valley, Oregon.

Salix evanstoniana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 10, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Evanston, Wyoming.

Salix flexuosa Newby. = *Salix proteaefolia flexuosa*.

Salix groenlandica Heer. Fl. Foss. Arct., vol. i, p. 101, pl. iv, f. 8-10, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group? Six miles above Spring Canyon, Montana.

Salix Hayei Lx. Fl. Dak. Gr., p. 48, pl. iii, f. 7, 1891.

Dakota group: Kansas.

Salix inaequalis Newby. Fl. Amboy Clays, p. 67, pl. xvi, f. 1, 4, 6; xvii, f. 2-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Salix integra Göpp. Zeitschr. Deutsch. Geol. Gesell., vol. iv, p. 493, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874]; Tert. F., p. 167, pl. xxii, f. 1, 2, 1878.

—: Black Buttes, Wyoming; Golden, Colorado; Corral Hollow, California.

Salix islandicus Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

—: Bellingham Bay.

Salix kamloopsiana Dn. Trans. Roy. Soc., Canada, vol. viii, sec. iv, p. 90, f. (in text) 32, 1890.

Eocene?: Kamloops, British Columbia.

Salix laramiana Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 28, pl. i, f. 10, 1886 [1887].

Upper Laramie group: Great Valley.

Salix Lavateri Heer. Fl. Tert. Helv., vol. ii, p. 28, pl. lxvi, f. 1-12, 1856; Fl. Foss. Alask., p. 27, pl. ii, f. 10, 1869.

Eocene?: Port Graham Alaska.

——?: Sams Creek, Oregon.

Salix Libbeyi Lx. Cret. and Tert. Fl., p. 156, pl. xxxi, f. 3, 1883.

Green River group: Florissant, Colorado.

Salix macrophylla Heer. Fl. Tert. Helv., vol. ii, p. 29, pl. lvii, 1856; Fl. Foss. Alask., p. 27, pl. ii, f. 9, 1869.

Eocene?: Port Graham, Alaska.

Salix media Heer. Fl. Tert. Helv., vol. ii, p. 32, pl. i, f. 9 f; lxviii, f. 14-19, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 168, pl. xxii, f. 3, 1878.

Green River group: Green River, Wyoming; Elko Station, Nevada.

Eolignitic: Wickliffe, Kentucky.

Salix Meekii Newby. Later Extinct Floras, p. 19, 1868.

Dakota group: Blackbird Hill, Nebraska.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Salix membranacea Newby. Later Extinct Floras, p. 19, 1868; Fl. Amboy Clays, p. 66, pl. xxix, f. 12, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

Salix minuta Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 218, pl. ix, f. 1, 1894.

Eocene?: Herendeen Bay, Alaska.

Salix nervillosa Heer. Phyll. Crét. d. Nebr., p. 15, pl. i, f. 3, 1866; Lx., Fl. Dak. Gr., p. 49, 1892.

Dakota group: Tehama, Nebraska.

Salix Newberryana Hollick in Newby. Fl. Amboy Clays, p. 68, pl. xiv, f. 2-7, 1895 [1896].

Amboy clay: New Jersey.

Salix pacifica Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vii, f. 24, 1882 [1883].

Upper Cretaceous: Baynes Sound.

Salix proteæfolia Lx. Am. Journ. Sci., vol. xlvi, p. 94, 1868; Rept. on Clay in N. J., p. 29, 1878.

Dakota group: Decatur, Nebraska.

Amboy clay: Woodbridge and Sayreville, New Jersey.

Cretaceous: Marthas Vineyard.

Salix proteæfolia flexuosa (Newby.) Lx. Fl. Dak. Gr., p. 50, pl. xlv, f. 4, 5, 1892.

Salix flexuosa Newby. Later Extinct Floras, p. 21, 1868; Ill. Cret. and Tert. Pl., pl. i, f. 4, 1878.

Dakota group: Kansas.

Cretaceous: Seacliff, Long Island.

Salix proteæfolia lanceolata Lx. Fl. Dak. Gr., p. 50, pl. lxiv, f. 6-8, 1892.

Dakota group: Ellsworth County, Kansas.

Salix proteæfolia linearifolia Lx. Lx. Fl. Dak. Gr., p. 49, pl. lxiv, f. 1-3, 1892.

Dakota group: Kansas.

Salix proteæfolia longifolia Lx. Fl. Dak. Gr., p. 50, pl. lxiv, f. 9, 1892.

Dakota group: Ellsworth County, Kansas.

Salix purpuroides Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 50, pl. clxxiv, f. 9, 1894.

Cretaceous: Seacliff, Long Island.

Salix Ræana Heer. Fl. Foss. Arct., vol. i, p. 102, pl. iv, f. 11-13; pl. xlvii, f. 11, p. 139; pl. xxi, f. 13, 1868.

Eocene?: Cook Inlet, Alaska.

Miocene?: Mackenzie River; John Day Valley, Oregon.

Lignitic tertiary: Great Valley.

Salix Schimperii Lx. Proc. U. S. Nat. Mus., vol. xi, p. 21, pl. xiii, f. 5, 1888.

Eocene?: Cherry Creek, Oregon.

Salix tabellaris Lx. Trans. Am. Phil. Soc., vol. xiii, p. 414, pl. xvii, f. 4, 1869.

Eolignitic: Mississippi.

Salix varians Göpp. Zeitschr. d. Deutsch. Geol. Gesell., vol. iv, p. 493, 1852; Tert. Fl. v. Schossnitz, p. 26, pl. xix, f. 17, 18; xx, f. 1, 2, 1855; Heer, Fl. Foss. Alask., p. 27, pl. ii, f. 8; iii, f. 1-3, 1869.

Eocene?: English Bay; Neniltochik, Alaska.

Salix Worthenii Lx. Trans. Am. Phil. Soc., vol. xiii, p. 414, pl. xv, f. 7, 1869.

Eolignitic: Lagrange, Tennessee; Mound City, Illinois.

Salix sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. ii, f. 15, 16, 1892.

Cretaceous: Staten Island.

Salix sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 22, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

Salix sp., Newby. Fl. Amboy Clays, p. 68, pl. xlii, f. 6-8, 1895 [1896].

Amboy clay: No location.

Salix sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Montana formation: Near Harpers, Wyoming.

Bull. 152—14

Salix sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

Salix sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 148, 1897.

Laramie group: Rock Springs, Wyoming.

Salix, fruiting catkin of, Lx. Fl. Dak. Gr., p. 51, pl. viii, f. 6, 1892.

Dakota group: Near Delphos, Kansas.

SALVINIA Adanson. Fam. Pl., vol. ii, p. 15, 1763.

Salvinia Alleni Lx. = Tmesipteris Alleni.

Salvinia attenuata Lx. = Marsilea attenuata.

Salvinia cyclophylla Lx. = Phyllites cyclophylla.

Salvinia elliptica Newby. Mss. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 255, pl. ccv, f. 14, 14a, 15, 1894.

Upper Cretaceous?: Carbonado, Washington.

Salvinia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

SANTALUM Linnæus. Gen., ed. 2, p. 165, 1742.

Santalum Americanum Lx. Cret. and Tert. Fl., p. 164, pl. xxxii, f. 7, 1883.

Green River group: Florissant, Colorado.

SAPINDOPSIS Fontaine. Potomac Fl., p. 296, 1889.

Sapindopsis brevifolia Font. Potomac Fl., p. 300, pl. cliii, f. 4; clv, f. 1, 7; clxiii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

Sapindopsis cordata Font. Potomac Fl., p. 296, pl. cxlvii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Sapindopsis elliptica Font. Potomac Fl., p. 297, pl. cxlvii, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

Sapindopsis magnifolia Font. Potomac Fl., p. 297, pl. cli, f. 2, 3; clii, f. 2, 3; cliii, f. 2; cliv, f. 1, 5; clv, f. 6, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

Sapindopsis obtusifolia Font. Potomac Fl., p. 301, pl. clvi, f. 13; clix, f. 3-6, 1889.

Potomac formation: Deep Bottom and near Brooke, Virginia.

Sapindopsis parvifolia Font. Potomac Fl., p. 300, pl. cliv, f. 6, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

Sapindopsis tenuinervis Font. Potomac Fl., p. 301, pl. cliii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

Sapindopsis variabilis Font. Potomac Fl., p. 298, pl. cli, f. 1; clii, f. 1, 4; cliii, f. 3; cliv, f. 2-4; clv, f. 2-5, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

SAPINDUS Tournefort ex. Linnæus. Gen. Pl., ed. i, p. 359, 1737.

Sapindus affinis Newby. Later Extinct Floras, p. 51, 1868.

Fort Union group: Gladstone, Dakota; Great Valley, Montana;
Woody Mountains, British Columbia.

Sapindus alatus Ward. Bull. U. S. Geol. Surv., no. 37, p. 68, pl. xxxi, f. 3, 4, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Sapindus americanus Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 142, 143, 144, 145, 1861.

—: Brandon, Vermont.

Sapindus angustifolius Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]; Tert. Fl., p. 265, pl. xlix, f. 2-7, 1878.

Eocene: Kentucky.

Green River group: Florissant, Colorado.

Eolignitic: Wickliffe, Kentucky.

Miocene: John Day Valley and? Lanes Creek, Oregon.

Sapindus apiculatus Vel. Fl. Boehm. Kriedefl., Theil iii, p. 6 [53], pl. vii [xxii], f. 1-8, 1884; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiii, f. 1, 2, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Sapindus caudatus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 264, pl. xlvi, f. 6, 1878.

Denver group: Golden, Colorado.

Eolignitic?: Cross Lake, Louisiana?

Sapindus coriaceus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]; Tert. Fl., p. 265, pl. xlix, f. 12-14, 1878.

Green River group: Elko Station, Nevada.

Eolignitic?: ? Cross Lake, Louisiana.

Sapindus Dentoni Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Tert. Fl. p. 265, pl. lxiv, f. 2-4, 1878.

Green River group?: Mouth White River.

Sapindus diversifolius Lx. Fl. Dak. Gr., p. 158, pl. lxiv, f. 18, 1892.

Dakota group: Kansas.

Sapindus dubius Ung. Denkschr. Wien. Akad., vol. vii (Foss. Fl. v. Gleichengb.), p. 180 [24], pl. v, f. 11, 1854; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 12, 1888.

Eolignitic: Wickliffe, Kentucky.

Sapindus falsifolius Al. Br. in Stizenberger. Verstein., p. 87, 1851; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 4, 1888.

Juglans falsifolia Al. Br. in Buckl. Geol.

Eolignitic: Boaz Station, Graves County, Kentucky.

Sapindus grandifoliolus Ward. Bull. U. S. Geol. Surv., no. 37, p. 67, pl. xxx, f. 3-5; pl. xxxi, f. 1, 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Sapindus inflexus Lx. Cret. and Tert. Fl., p. 182, pl. xxxii, f. 2, 1883.

Green River group: Florissant, Colorado.

Sapindus lancifolius Lx. Cret. and Tert. Fl., p. 182, pl. xxxii, f. 3-6; pl. xxxvii, f. 9, 1883.

Green River group: Florissant, Colorado.

Sapindus membranaceus Newby. Later Extinct Floras, p. 52, 1868.
Fort Union group: Fort Union, North Dakota.

Sapindus Morrisoni Lx. Cret. and Tert. Fl., p. 83, pl. xvi, f. 1, 2, 1883; Fl. Dak. Gr., p. 158, pl. xxxv, f. 1, 2, 1892.

Dakota group: Morrison, Colorado; Kansas; New Ulm, Minnesota.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

Sapindus obtusifolius Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 419, 1873 [1874]; Tert. Fl., p. 266, pl. xlix, f. 8-11, 1878.

Green River group?: Eight miles southeast of Green River Station, Wyoming.

Fort Union group: Bad Lands, Dakota.

Sapindus stellarifolius Lx. Tert. Fl., p. 264, pl. xlix, f. 1, 1878.

Green River group: Florissant, Colorado.

Sapindus undulatus Al. Br. in Stizenberger. Verstein, p. 87, 1851; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xxii, f. 6, 1869.

Eolignitic: Mississippi.

Sapindus sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Upper Laramie group: North Saskatchewan.

Sapindus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek coal," Wyoming.

SAPOTACITES Ettingshausen. Abhandl. d. k. k. Geol. Reichsanstalt. [Tert. Fl. Häring], vol. ii, abt. iii, p. 61, 1853.

Sapotacites americanus Lx. Geol. Tenn., p. 428, pl. K., f. 8, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Sapotacites Haydenii Heer. Proc. Phil. Acad. Sci., vol. x, p. 265, 1858; Newby., Later Extinct Floras, p. 8, 1868.

Dakota group: Kansas.

Sapotacites retusus Heer. Fl. Foss. Arct., vol. vii, p. 32, pl. lxi, f. 10, 1883; Newby., Fl. Amboy Clays, p. 123, pl. liii, f. 5, 6, 1895 [1896].

Amboy clay, Woodbridge, New Jersey.

Sapotacites sp.? Lx. Fl. Dak. Gr., p. 114, pl. lxxv, f. 3, 1892.

Dakota group: Kansas.

SASSAFRAS Linnæus. Syst., ed. i, 1735.

Sassafras acutilobum Lx. Cret. Fl., p. 79, pl. xiv, f. 1-2, 1874; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 236, pl. vii, f. 1, 1893.

Dakota group: Salina River, Kansas.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

Sassafras bilobatum Font. Potomac Fl., p. 290, pl. clvi, f. 12; clxiv, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

Sassafras (**Araliopsis**) **Burpeana** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886]; op. cit., vol. iv., p. 28, pl. ii, f. 11, 1886 [1887].
Canadian upper Laramie: Calgary, Canada.

Sassafras (**Araliopsis**) **cretaceum** Newby. Later Extinct Floras, p. 14, 1868; Lx., Ill. Cret. and Tert. Pl., pl. vi, f. 1-4, 1878; Cret. Fl., p. 80, pl. xi, f. 1, 2; xii, f. 2, 1878.

Dakota group: Nebraska and Kansas.

Sassafras (**Araliopsis**) **cretaceum dentatum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 344, 1874 [1876]; Cret. Fl., pl. xi, f. 1, 2.

Dakota group: Kansas?

Sassafras (**Araliopsis**) **cretaceum grossedentatum** Lx. Fl. Dak. Gr., p. 101, pl. li, f. 5, 1892.

Dakota group: Kansas.

Sassafras **cretaceum heterolobum** Font. Potomac Fl., p. 289, pl. clii, f. 5; clix, f. 8; clxiv, f. 5, 1889.

Potomac formation: Near Brooke, Virginia.

Sassafras (**Araliopsis**) **cretaceum obtusum** Lx. Cret. Fl., p. 80, pl. xii, f. 3; xiii, f. 1, 1874; Fl. Dak. Gr., p. 102, 1892.

Sassafras (*Araliopsis*) *obtusum* Lx., Cret. and Tert. Fl., p. 56, 1883.

Cheyenne sandstone: Belvidere, Kansas.

Dakota group: Kansas.

Sassafras (**Araliopsis**) **dissectum** Lx. Cret. and Tert. Fl., p. 57, 1883; Fl. Dak. Gr., p. 101, pl. xiv, f. 1, 1892.

Dakota group: Fort Harker, Kansas.

Sassafras (**Araliopsis**) **dissectum symmetricum** Hollick. Bull. Torr. Bot. Club, vol. xxii, no. 5, p. 226, pl. ccxxvii, 1895.

Dakota group: Fort Harker, Kansas.

Sassafras harkeriana Lx. = *Cissites harkerianus*.

Sassafras **hastatum** Newby. Fl. Amboy Clays, p. 88, pl. xxvii, f. 4-6; xxviii, f. 1, 2; xl, f. 4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Sassafras Leconteanum Lx. = *Persea Lecontiana*.

Sassafras (**Araliopsis**) **mirabile** Lx. Cret. Fl., p. 80, pl. xii, f. 1, 1874; Cret. and Tert. Fl., p. 56, 1883.

Sassafras mirabilis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

Platanus latiloba Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Kansas.

Sassafras **Mudgii** Lx. Am. Journ. Sci., vol. xlvi, p. 99, 1868; Cret. Fl., p. 78, pl. xiv, f. 3, 4; xxx, f. 7, 1874.

Dakota group: Salina River, Kansas.

Cheyenne sandstone: Belvidere, Kansas.

Sassafras obtusu(s)m Lx. = *Cissites salisburiae-folius*.

Sassafras (*Araliopsis*) *obtusum* Lx. Cret. and Tert. Fl., p. 56] = *Sassafras cretaceum obtusum*.

Sassafras (**Araliopsis**) **papillosum** Lx. Fl. Dak. Gr., p. 102, pl. vi, f. 7, 1892.

Dakota group: Kansas.

Sassafras parvifolium Font. Potomac Fl., p. 289, pl. cxxxix, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

Sassafras (Araliopis) platanoides Lx. Cret. and Tert. Fl., p. 58, pl. vii, f. 1, 1883.

Dakota group: Kansas.

Sassafras? primordiale Lx. Fl. Dak. Gr., p. 100, pl. xvi, f. 10, 1892.

Dakota group: Kansas.

Sassafras progenitor Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 53, pl. clxxiv, f. 1, 1894; Newby., Fl. Amboy Clays, p. 88, pl. xxvii, f. 1-3, 1895 [1896].

Cretaceous: Oak Neck, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

Sassafras (Araliopsis) recurvatum Lx. Cret. and Tert. Fl., p. 57, 1883.

Platanus recurvata Lx. Cret. Fl., p. 71, pl. x, f. 3-5, 1874.

Sassafras recurvatus Lx. Ann. Rept., U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

Dakota group: Near Fort Harker, Kansas.

Sassafras Selwynii Dn. Geol. Surv. Canada, Rept. Prog. for 1879-80, p. 53A, 1881; Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 28, pl. ii, f. 13, 1886 [1887].

Canadian upper Laramie: Souris River.

Sassafras subintegrifolium Lx. Am. Journ. Sci., vol. xlvi, p. 99, 1868; Fl. Dak. Gr., p. 99, pl. xiv, f. 2, 1892.

Dakota group: Kansas.

Sassafras sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Six miles above Spring Canyon, Montana.

Sassafras (Araliopsis) sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Burts Creek, New Jersey.

Sassafras sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 30, 30a, 1882 [1883].

Upper Cretaceous: Baynes Sound; Vancouver Island.

Sassafras sp., Kn. in Hill. Am. Journ. Sci., vol. 1, p. 212, 1895.

Cheyenne sandstone: Belvidere, Kansas.

SCIRPUS (Tournefort) Linnæus. Syst., ed. i, 1735.

Scirpus sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Lignitic Tertiary: Porcupine Creek.

Scirpus sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Lignitic Tertiary: Porcupine Creek.

SCLEROPTERIS Saporta. Paléontol. Française: Pl. Jurass., vol. i, p. 364, 1873.

Scleropteris dentata Font. Potomac Fl., p. 153, pl. lxiii, f. 3, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

Scleropteris elliptica Font. Potomac Fl., p. 151, pl. xxviii, f. 2, 4, 6; xxix, f. 1, 1889.

Potomac formation: Fredericksburg, near Potomac Run, near Dutch Gap Canal, Kankeys, and near Telegraph Station, Virginia.

Scleropteris elliptica longifolia Font. Potomac Fl., p. 152, pl. xxviii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

Scleropteris vernonensis Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 349, pl. ii, f. 1-3, 1895.

Potomac formation: Mount Vernon, Virginia.

Scleropteris virginica Font. Potomac Fl., p. 152, pl. xxviii, f. 3, 5, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

SELAGINELLA Beauvois. Prodr. Ætheog., p. 101, 1805.

Selaginella Berthoudi Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874]; Tert. Fl., p. 46, pl. v, f. 12, 12a, 1878.

Denver group: Golden, Colorado.

Selaginella falcata (Lx.) Emend. Kn.

Selaginella? falcata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1874 [1876; Tert. Fl., p. 46, pl. lxi, f. 12-15 [non pl. lxiv, f. 13, 13a], 1878.

Montana formation: Point of Rocks, Wyoming.

Selaginella falcata Lx. Ex. p. [Tert. Fl., pl. lxiv, f. 13, 13a] = *Lycopodium Lesquereuxii*.

Selaginella laciniata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 378, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1874 [1876]; Tert. Fl., p. 47, pl. lxiv, f. 12, 12a, 1878.

Montana formation: Point of Rocks, Wyoming.

SCLEROTITES Meschinelli. Syllog. Fung. Foss., p. 67 [803], 1892.

Sclerotites rubellus (Lx.) Meschinelli. Syllog. Fung. Foss., p. 69 [805], 1892.

Sclerotium rubellum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 375, 1872 [1873]; Tert. Fl., p. 35, pl. i, f. 2, 2f, 1878.

Denver group: Golden, Colorado.

Sclerotites sp. (Lx.) n. comb.

Sclerotium sp., Lx. Fl. Dak. Gr., p. 23, pl. lix, f. 4, 4a, 1891.

Dakota group.

Sclerotium rubellum Lx. = *Sclerotites rubellus*.

Sclerotium sp. Lx. = *Sclerotites*.

SEQUOIA Endlicher. Synop. Conif., p. 197, 1847.

Sequoia acuminata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Tert. Fl., p. 80, pl. vii, f. 15-16a, 1878.

Laramie group: Black Buttes, Wyoming.

Sequoia acutifolia Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 7, 7a, 1891.

Kootanie: Great Falls, Montana.

- Sequoia affinis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 310, 1874 [1876]; Tert. Fl., p. 75, pl. vii, f. 3-5; pl. lxxv, f. 1-4, 1878.
Sequoia Langsdorffii Brongn. Lx., Ann. Rept., p. 400, 1874 [1876]; Tert. Fl., p. 76, 1878.
 Green River group: Florissant, Colorado; Elko Station, Nevada.
- Sequoia ambigua** Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 78, pl. xxi, 1874; Font., Potomac Fl., p. 245, pl. cxviii, f. 2; cxx, f. 1-6; cxxvii, f. 5; cxxxii, f. 3, 1889.
 Cretaceous: Marthas Vineyard.
 Kootanie: Great Falls, Montana.
 Potomac formation: Near Dutch Gap Canal and near Telegraph Station, Virginia.
- Sequoia angustifolia** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Tert. Fl., p. 77, pl. vii, f. 6-10, 1878; Cret. and Tert. Fl., p. 240, pl. l, f. 5, 1883.
 Green River group: Elko Station, Nevada.
 Miocene: Corral Hollow, California.
- Sequoia biformis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., p. 366, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 80, pl. lxii, f. 15-18a, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 16, pl. i, f. 1-6, 1887.
 Montana formation: Point of Rocks, Wyoming.
- Sequoia brevifolia** Heer. Fl. Foss. Arct., vol. i, p. 93, pl. ii, f. 23, 1868; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 78, pl. lxi, f. 25-27, 1878.
 Montana formation: Point of Rocks, Wyoming.
- Sequoia condita** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 391, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 335, pl. iv, f. 5-7, 1874 [1876]; Cret. and Tert. Fl., p. 32, pl. i, f. 5-7, 9, 1883; Rept. on Clays in N. J., p. 29, 1878.
 Dakota group: Kansas.
 Amboy clay: Sayreville, New Jersey?
- Sequoia Couttsiæ** Heer. Phil. Trans., vol. clii, pt. ii, p. 1051, pls. lix, lx, lxi, 1862; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 30, pl. i, f. 5, 1892.
 Cretaceous: Staten Island.
 Canadian upper Laramie: North Saskatchewan.
- Sequoia cycadopsis** Font. Potomac Fl., p. 243, pl. cxii, f. 9-11; cxiii, f. 1-3, 1889.
 Potomac formation: Near Brooke, Virginia.
- Sequoia delicatula** Font. Potomac Fl., p. 247, pl. cxxi, f. 3, 1889.
 Potomac formation: Near Dutch Gap Canal, Virginia.
- Sequoia densifolia** Font. Potomac Fl., p. 246, pl. cxxi, f. 4, 1889.
 Potomac formation: Near Dutch Gap Canal, Virginia.

Sequoia fastigiata (Sternbg.) Heer. Neue Denkschr. Schw. Ges., vol. xxiii, Mém. 2, p. 11, pl. i, f. 10-13, 1869; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 391, 1875 [1876]; Cret. and Tert. Fl., p. 31, 1883; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 335, pl. iii, f. 2, 8, 1874 [1876].

Caulerpites fastigiatus Sternbg. Vers., vol. ii, p. 23, 1833.

Dakota group: Kansas.

Sequoia formosa Lx. Am. Journ. Sci., vol. xlvi, p. 92, 1868.

Dakota group: Decatur, Nebraska.

Sequoia gracillima (Lx.) Newby. Fl. Amboy Clays, p. 50, pl. ix, f. 1-3, 1895 [1896].

Glyptostrobus gracillimus Lx. Am. Journ. Sci., 2d ser., vol. xlvi, p. 92, 1868; Cret. Fl., p. 52, pl. i, f. 8, 11-11f, 1874; Cret. and Tert. Fl., p. 32, pl. i, f. 6-6b, 1883.

———?: Forks of Pine River, Northwest Territory.

Amboy clay: Keyport, New Jersey.

Cheyenne sandstone: Belvidere, Kansas.

Dakota group: Sioux City, Iowa.

Sequoia gracilis Heer. Fl. Foss. Arct., vol. iii, abt. ii, abt. 80, 1873; Font., Potomac Fl., p. 247, pl. cxxvi, f. 3, 4, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

Sequoia Heerii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 290, 1871 [1872]; Tert. Fl., p. 77, pl. vii, f. 11-13, 1878.

Green River group?: Sage Creek, ? Montana.

Sequoia heterophylla Vel. Gymnosp. d. Böhm. Kreidf., p. 22, pl. xii, f. 2-4, 6-9; xiii, f. 12, 1885; Newby., Fl. Amboy Clays, p. 49, pl. vi, f. 1-13, 1895 [1896].

Amboy clay: New Jersey; Kreischerville, Staten Island.

Sequoia Langsdorffii (Brغت.) Heer. Fl. Tert. Helv., vol. i, p. 54, pl. xx, f. 2; xxi, f. 4, 1855; Lx., Tert. Fl., p. 76, 1878.

Taxites Langsdorffii Brongn. Prod. Hist. Vég. Foss., p. 108, 1828.

Miocene: John Day Valley, Oregon; Mackenzie River.

Green River group: Florissant, Colorado.

Eocene: Alaska.

Fort Union group: Montana; Porcupine Creek, Canada.

Upper Cretaceous: Nanaimo.

Sequoia Langsdorffii var. Heer. Fl. Foss. Alask., p. 23, pl. i, f. 10b, 1869.

Eocene?: Near Sitka, Alaska.

Sequoia longifolia Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 79, pl. vii, f. 14, 14a; pl. lxi, f. 28, 29.

Montana formation: Point of Rocks, Wyoming; Coalville, Utah.

Laramie group: Greely, Coal Creek, and Marshalls, Colorado.

Sequoia Langsdorffii Brongn. Lx. [Ann. Rept. 1874, p. 410] = *Sequoia affinis*.

Sequoia Nordenskiöldii Heer. Fl. Foss. Arct., vol. ii, abt. iii, p. 36, pl. ii, f. 13*b*; iv, f. 1*a*, *b*, 4-38, 1870; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 19, 1888.

Miocene: John Day Valley, Oregon; Mackenzie River.

Canadian upper Laramie: Porcupine Creek, Great Valley.

Sequoia pagiophylloides Font. Proc. U. S. Nat. Mus., vol. xvi, p. 276, pl. xlii, f. 1-3*a*, 1893.

Trinity division: Glenrose, Texas.

Sequoia Reichenbachii (Gein.) Heer. Fl. Foss. Arct., vol. i, p. 83; pl. xliii, f. 1*d*, 2*b*, 5*a*, 1868; Lx., Cret. Fl., p. 51, pl. i, f. 10-10*b*, 1874; Fl. Dak. Gr., p. 35, pl. ii, f. 4, 1892; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 30, pl. i, f. 18, 1892; Font., Potomac Fl., p. 243, pl. cxviii, f. 1, 4; cxix, f. 1-5; cxx, f. 7, 8; cxxii, f. 2; clxvii, f. 5, 1889; Dn., Trans. Roy. Soc. Canada, 1882, p. 21, 1882; Newby., Fl. Amboy Clays, p. 49, pl. ix, f. 19, 1895 [1896].

Avancarites Reichenbachii Gein. Charakteristik, heft iii, p. 98, pl. xxiv, f. 4, 1842.

Abietites dubius Lx. Tert. Fl., p. 81, pl. vi, f. 20, 21, 21*a*, 1878.

Livingston beds: Bozeman coal field, Montana.

Montana formation: Point of Rocks, Wyoming.

Amboy clay: Woodbridge, New Jersey.

Clay marl: Cliffwood, New Jersey.

Belly River series: Belly River, Canada.

Potomac formation: Dutch Gap Canal and Fredericksburg, Virginia.

Dakota group: Fort Harker, Kansas.

Kootanie: Great Falls, Montana.

Sequoia Reichenbachii longifolia Font. Potomac Fl., p. 244, pl. cxvii, f. 8, 1889.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

Sequoia rigida Heer. Fl. Foss. Arct., vol. iii, p. 80, pl. xxii, f. 5*g*, 11*a*, 1873; Font., Potomac Fl., p. 246, pl. cxviii, f. 3; cxxi, f. 2; cxxvi, f. 2; cxxx, f. 3, 1889.

Potomac formation: Near Telegraph Station and near Potomac Run, Virginia.

Kootanie: Great Falls, Montana.

Sequoia Smittiana Heer. Zeitschr. d. deutsch. geol. Gesell. 1872, p. 161, 1872; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 7, 7*a*, 1885 [1886].

Amboy clay?: Sayreville, New Jersey?

Kootanie: Coal Creek, Crows Nest Pass and Middle Fork North Branch Old Man River, British Columbia; Great Falls, Montana.

Sequoia spinosa Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene? Cook Inlet, Alaska.

Sequoia subulata Heer. Zeitschr. d. deutsch. geol., Gesell. 1872, p. 162, 1872; Font., Potomac Fl., p. 245, pl. cxvii, f. 7, cxviii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal, near Telegraph Station, and Fredericksburg, Virginia.

Amboy clay?: Sayreville, New Jersey?

Sequoia Winchelli Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 10, pl. A, f. 1, 1893.

Dakota group: Austin, Minnesota.

Sequoia sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Upper Laramie group: Turtle Mountain.

Lignitic: Souris Valley.

Middle lignitic: Two hundred and forty-five-Mile Valley; Wood End Depot; Mackenzie River; Edmonton, British Columbia.

Sequoia sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Canadian upper Laramie: Wood End Depot; Coteau; Mackenzie River.

Sequoia sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 32, 1887. [Wood.]

Belly River series: Ribstone Creek; Saskatchewan River, British Columbia.

Sequoia sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 32, 1887. [Wood.]

Fort Pierre group: Bow River, Canada.

Belly River series: Ribstone Creek; west of Medicine Hat.

Sequoia sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 80, f. (in text) 8, 1890 [1891].

——: Stump Lake, British Columbia.

Sequoia sp., Font. Potomac Fl., p. 247, pl. cxx, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

Sequoia sp., Font. Potomac Fl., p. 248, pl. cxvi, f. 7; cxxxii, f. 2, 5, 6, 1889.

Potomac formation: Near Brooke and Fredericksburg, Virginia.

Sequoia sp., Font. Potomac Fl., p. 248, pl. cxxxii, f. 10, 1889.

Potomac formation: Fredericksburg, Virginia.

Sequoia sp., Kn. in Hill. Am. Journ. Sci., vol. I, p. 212, 1895.

Cheyenne sandstone: Belvidere, Kansas.

Sequoia sp.? Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

Sequoia sp., Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876].

Laramie group: Black Buttes, Wyoming.

Sequoia? sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 310, 1874 [1876].

——?: Middle Park, Colorado.

Sequoia sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Burts Creek, New Jersey.

Sequoia sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 723, 1898.

Payette formation: Marsh, Idaho.

SERENOPSIS Hollick. Bull. Torr. Bot. Club, vol. xx, p. 169, 1893.

Serenopsis Kempii Hollick. Bull. Torr. Bot. Club, vol. xx, p. 169, pl. cxlix, 1893; *ibid.*, vol. xx, p. 334, 335, pl. clxvi, 1893.

Cretaceous: Glen Cove, Long Island.

Smilacites grandifolia Ung. = *Smilax grandifolia*.

SMILAX (Tournefort) Linnæus. Syst., ed. i, 1735.

Smilax cyclophylla Newby. Bost. Journ. Nat. Hist., vol. vii, p. 520, 1863.

Miocene?: Birch Bay, Washington.

Smilax Franklini Heer. Fl. Foss. Arct., vol. i, p. 136, pl. xxi, f. 18, 1868.

Miocene?: Mackenzie River.

Smilax grandifolia (Ung.) Heer. Fl. Tert. Helv., vol. i, p. 82, pl. xxx, f. 8, 1855; Lx., Ann. Rept., op. cit., p. 385, 1872 [1873]; Tert. Fl., p. 94, pl. ix, f. 5, 1878.

Smilacites grandifolia Ung. Chlor. Prot., p. 129, pl. xl, f. 3, 1847.

Laramie group?: Carbon, Wyoming.

Laramie group: Canon City, Colorado, etc.

Smilax grandifolia-cretacea Lx. Fl. Dak. Gr., p. 40, pl. xlvi, f. 3, 1892.

Dakota group: Kansas.

Smilax obtusangula? Heer. Fl. Tert. Helv., vol. iii, p. 166, pl. cxlvii, f. 25, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Black Buttes, Wyoming.

Smilax undulata Lx. Fl. Dak. Gr., p. 39, pl. xlvi, f. 2, 1892.

Dakota group, Kansas.

Smilax Wardii Lx. Proc. U. S. Nat. Mus., vol. xi, p. 19, pl. xiii, f. 1, 1888.

Miocene; John Day Valley, Oregon.

SPARGANIUM (Tournefort) Linnæus. Syst., ed. i, 1735.

Sparganium stygium Heer. Fl. Tert. Helv., vol. i, p. 101, pl. xlv, f. 1-4, 1855; Ward, Bull. U. S. Geol. Surv., no. 37, p. 18, pl. iii, f. 6, 7, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Sparganium! sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Three miles above Spring Canyon, Montana.

Spathites sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Montana formation: Near Harpers, Wyoming.

SPEGGAZZINITES Felix. Zeitschr. d. deutschen geol. Gesell. 1894, p. 279, 1894.

Spegazzinites cruciformis Felix. Zeitschr. d. deutschen geol. Gesell., Jahr. 1894, p. 279, pl. xix, f. 8, 1894; op. cit., Jahr. 1896, p. 255, 1896.

Eocene: Yanceys, Yellowstone National Park.

Sphæria problematica Kn. = *Sphærites problematicus*.

SPHÆRITES Unger. Gen. et Sp. Pl. Foss., p. 37, 1850.

Sphærites lapideus (Lx.) Mesch. = *Rostelliniles lapideus*.

Sphærites myricæ (Lx.) Meschinelli. Syllog. Fung. Foss., p. 23, 1892.

Sphæria myricæ Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 190, 1872 [1873]; Tert. Fl., p. 34, pl. i, f. 4, 1878.

Green River group: Green River Station, Wyoming.

Laramie group: Black Buttes, Wyoming.

Sphærites Lesquereuxi Meschinelli. Syllog. Fung. Foss., p. 31, 1892.

Sphæria rhytismoides Lx. [non Ett., 1869]. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 35, pl. i, f. 5, 5a, 1878.

Laramie group: Black Buttes, Wyoming.

Sphærites problematicus Kn.

Sphæria problematica Kn. in Lx. Fl. Dak. Gr., p. 23, pl. xxxi, f. 2, 2a, 1891.

Dakota group: Kansas.

SPHENOLEPIDIDIUM Heer. Fl. Foss. du Portugal, p. 19, 1881.

Sphenolepididium dentifolium Font. Potomac Fl., p. 258, pl. cxxvii, f. 3, 4; cxxviii, f. 2-6; cxxix, f. 5; cxxx, f. 4-6, 10, 1889.

Potomac formation: Fredericksburg, Virginia.

Sphenolepididium Kurrianum (Dunk.) Heer. Fl. Foss. du Portugal, p. 19, pl. xii, f. 1b; xiii, f. 1b, 8b; xviii, f. 1-8, 1881; Font., Potomac Fl., p. 260, pl. cxxvi, f. 1, 5, 6; cxxviii, f. 1, 7; cxxix, f. 1, 4, 6, 8; cxxx, f. 11; cxxxi, f. 4; clxvii, f. 2, 1889.

Thuites (Cupressites?) Kurrianus Dunk. Monogr. Norddeutsch. Wealdenbildung., p. 20, pl. vii, f. 8, 1846.

Potomac formation: Dutch Gap Canal, Fredericksburg, near Brooke, and near Telegraph Station, Virginia.

Sphenolepididium pachyphyllum Font. Potomac Fl., p. 259, pl. cxxxi, f. 6, 7, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Kootanie: Anthracite, British Columbia.

Sphenolepididium parceramosum Font. Potomac Fl., p. 257, pl. cxxix, f. 7; cxxx, f. 8; cxxxi, f. 2, 1889.

Potomac formation: Fredericksburg and near Brooke, Virginia.

Sphenolepididium recurvifolium Font. Potomac Fl., p. 258, pl. cxxvii, f. 2; cxxx, f. 2, 7, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, and near Telegraph Station, Virginia.

Sphenolepidium Sternbergianum (Dunk.) Heer. Fl. Foss. du Portugal, p. 19, pl. xiii, f. 1a, 2-8; xiv, 1881; Font., Potomac Fl., p. 261, pl. cxxi, f. 8, 10, 11; cxxx, f. 9, 1889.

Muscites Sternbergianus Dunk. Monogr. Norddeutsch. Wealdenbildung, p. 20, pl. vii, f. 10, 1846.

Potomac formation: Near Potomac Run and Fredericksburg, Virginia.

Sphenolepidium Sternbergianum densifolium Font. Potomac Fl., p. 261, pl. cxviii, f. 7; cxxi, f. 5, 7, 9; cxxv, f. 2; cxxix, f. 3; cxxx, f. 1; cxxxi, f. 1, 3; cxxxii, f. 4, 1889; Proc. U. S. Nat. Mus., vol. xvi, p. 268, pl. xxxvi, f. 10, 1893.

Trinity division: Glenrose, Texas.

Potomac formation: Near Telegraph Station, near Potomac Run, and Fredericksburg, Virginia.

Sphenolepidium virginicum Font. Potomac Fl., p. 259, pl. cxxv, f. 4; clxvi, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

Sphenolepidium sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 13, 1892.

Kootanie: Anthracite?, British Columbia.

SPHENOPTERIS Brongniart. Class. et Dist. Vég. Foss.: Mem. Mus. Hist. Nat., vol. viii, p. 233, 1822.

Sphenopteris acrodentata Font. Potomac Fl., p. 90, pl. xxxiv, f. 4, 1889.

Potomac formation: Dutch Gap Canal, Virginia; Baltimore, Maryland.

Sphenopteris corrugata Newby. Later Extinct Floras, p. 10, 1868.

Dakota group: Blackbird Hill, Nebraska.

Sphenopteris elongata Newby. Bost. Journ. Nat. Hist., vol. vii, p. 511, 1863.

——: Point Doughty, Orcas Island; Protection Island.

Sphenopteris eocenica Ett. = *Dryopteris arguta*.

Sphenopteris grevilicoides Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 34, pl. xi, f. 10, 11, 1874; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard.

Sphenopteris Lakesii Lx. = *Dryopteris arguta*.

Sphenopteris Guyottii Lx. Cret. and Tert. Fl., p. 137, pl. xxi, f. 1-7, 1883.

Green River group: Florissant, Colorado.

Sphenopteris latiloba Font. Potomac Fl., p. 90, pl. xxxv, f. 3-5; xxxvi, f. 4-9; xxxvii, f. 1, 1889.

Kootanie: Anthracite, British Columbia.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Deep Bottom, and near Telegraph Station, Virginia.

Sphenopteris Mantelli Brongn. = *Onychiopsis Mantelli*.

Sphenopteris membranacea Lx. = *Dryopteris arguta*.

Sphenopteris nigricans Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1873 [1874]; Tert. Fl., p. 51, pl. ii, f. 4-5a, 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

Sphenopteris pachyphylla Font. Potomac Fl., p. 93, pl. i, f. 5, 1889.

Potomac formation: Trents Reach, Virginia.

Sphenopteris spatulata Font. Potomac Fl., p. 93, pl. i, f. 4, 1889.

Potomac formation: Trents Reach, Virginia.

Sphenopteris thyrsopteroides Font. Potomac Fl., p. 89, pl. xxv, f. 3; lviii, f. 5, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

***Sphenopteris valdensis*?** Heer. Fl. Foss. d. Portugal, p. 14, 1881;

Font., Proc. U. S. Nat. Mus., vol. xvi, p. 263, pl. xxxvi, f. 2, 1893.

Trinity division: Glenrose, Texas.

SPHENOZAMITES Brongniart. Tableau Vég. Foss., p. 61 [110], 1849.

Sphenozamites sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

Spheria lapidea Lx. = *Rossellinites lapideus*.

Spheria myricæ Lx. = *Sphærites myricæ*.

Spheria rhytismoides Lx. = *Sphærites Lesquereuxi*.

SPIRÆA Linnæus. Syst. Nat., ed. i, 1735.

Spiræa Andersoni Heer. Fl. Foss. Alask., p. 39, pl. viii, f. 3, 1869.

Eocene?: Port Graham, Alaska.

SPIRAXIS Newberry. Ann. N. Y. Acad. Sci., vol. iii, p. 219, 1885.

Spiraxis bivalvis Ward. Bull. U. S. Geol. Surv., no. 37, p. 14, pl. i, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

STAPHYLEA Linnæus. Sp. Pl., ed. i, p. 270, 1753.

Staphylea acuminata Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 415, 1873 [1874]; Tert. Fl., p. 267, pl. xlviii, f. 4, 5, 1878.

Green River group: Middle Park, Costellos Ranch, and Florissant, Colorado.

STENOPTERIS Saporta. Paléont. Française: Pl. Jur., vol. i, p. 290, 1870.

Stenopteris virginica Font. Potomac Fl., p. 112, pl. xxi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

STERCULIA Linnæus. Diss. Dass., p. 29, 1747.

Sterculia aperta Lx. Cret. and Tert. Fl., p. 82, pl. x, f. 2, 3, 1883; Fl.

Dak. Gr., p. 185, pl. xxii, f. 4, 1892.

Dakota group: Kansas.

Sterculia Drakei Cummins=*Sterculia Snowii*.

Sterculia elegans Font. Potomac Fl., p. 314, pl. clvii, f. 2; clviii, f. 2, 3, 1889.

Potomac formation: Deep Bottom, Virginia.

Sterculia labrusca Ung. Foss. Fl. v. Sotzka, p. 45, pl. xxviii, f. 1-11, 1850; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Laurus labrusca Ung. Gen. et Sp. Pl. Foss., p. 423, 1850.

Cretaceous: Marthas Vineyard.

Sterculia Krejci Vel. Fl. Böhm. Kried., Theil ii, p. 22, pl. v, f. 1, 1883; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard.

Sterculia lineariloba Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 358, 1874 [1876]. [Not afterwards referred to by Lesquereux.]

Dakota group: Clay Center, Kansas.

Sterculia lugubris Lx. Cret. and Tert. Fl., p. 81, pl. vi, f. 1-3, 1883.

Dakota group?: Near Golden, Colorado.

Sterculia modesta Sap. Lx.=*Sterculia Saportanea*.

Sterculia mucronata Lx. Fl. Dak. Gr., p. 182, pl. xxx, f. 1-4, 1892.

Dakota group: Kansas.

Sterculia obtusiloba Lx.=*Sterculia tripartita*.

Sterculia reticulata Lx. Fl. Dak. Gr., p. 185, pl. xxxiv, f. 10, 1892.

Dakota group: Kansas:

Sterculia rigida Lx. Cret. and Tert. Fl., p. 179, pl. xxxiv, f. 12, 1883.

Green River group: Florissant, Colorado.

Sterculia Snowii Lx. Fl. Dak. Gr., p. 183, pl. xxx, f. 5; pl. xxxi, f. 2, 3; pl. xxxii; pl. xxxiii, f. 1-4, 1892.

Sterculia Drakei Cum. Third Ann. Rept. Geol. Surv. Texas, 1891, p. 210, f. 8, 1892; Kn. in Hill, Am. Journ. Sci., vol. 1, p. 213, 1895.

Dakota group: Kansas; Big Tucumcari Mountain, New Mexico.

Cheyenne sandstone: Belvidere, Kansas.

Sterculia Snowii disjuncta Lx. Fl. Dak. Gr., p. 184, p. lviii, f. 6, 1892.

Dakota group: Kansas.

Sterculia Saportanea nom. nov.

Sterculia modesta Sap. Lesquereux, Cret. and Tert. Fl., p. 125, pl. xx, f. 5, 1883. [*S. modesta* Sap., 1868, preoccupied by *S. modesta* Heer, 1853-1855.]

Denver beds: Golden, Colorado.

Sterculia tripartita [Lx.] n. comb.

Sterculia obtusiloba Lx. Cret. and Tert. Fl., p. 82, pl. viii, f. 3, 1883.

Aralia tripartita Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 248, pl. i, f. 1, 1874 [1876].

Dakota group: Kansas.

Sterculia vetustula Dn. Trans. Roy. Soc. Canada, vol. iii. sec. iv, p. 10, pl. iii, f. 2, 1885 [1886].

Intermediate series (Cretaceous): North Fork Old Man River, British Columbia.

Sterculia sp., Lx. Rept. on Clays in N. J., p. 28, 1878.

Amboy clay: Washington, New Jersey.

Sterculia sp., Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiv, f. 4-7, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

STROBILITES Lindley and Hutton. Foss. Fl. Gr. Brit., vol. ii, p. 23, pl. lxxxix, 1833-1835.

Strobilites inquirendus Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xi, f. 1, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

STYRAX (Tournefort) Linnæus. Syst., ed. i, 1735.

Styrax Ambra Ung. Syll. Pl. Foss., pt. iii, p. 34, pl. xxiv, f. 19, 20, 1865; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 51, 1888.

Denver group: Golden, Colorado.

Styrax laramiense Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 51, 1888.

Denver group: Golden, Colorado.

SYMPHOROCARPOPHYLLUM Dawson. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 29, 1886 [1887].

Symphorocarpophyllum albertum Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 30, pl. ii, f. 17, 1886 [1887].

Canadian upper Laramie: Great Valley, British Columbia.

Symphorocarpophyllum linnæiforme Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 30, pl. ii, f. 18, 1886 [1887].

Canadian upper Laramie: Porcupine Creek.

TÆNIOPTERIS Brongniart. Prodr. Hist. Vég. Foss., p. 61, 1828.

Tæniopteris Gibbsii Newby. Bot. Journ. Nat. Hist., vol. vii, p. 512, 1863.

——: Point Doughty, Orcas Island.

Tæniopteris plumosa Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 15, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

TAONURUS Fisher-Ooster. Die fossilen Fucoiden d. Schweizer-Alpen, p. 41, 1858.

Taonurus incertus Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 10, 1885 [1886].

Kootanie: British Columbia (no locality).

TAXITES Brongniart. Prodr. Hist. Vég. Foss., p. 108, 1828.

Taxites Langsdorffii Brgt. = *Sequoia Langsdorffii*.

Taxites Olriki Heer. Fl. Foss. Arct., vol. i, p. 95, pl. 1, f. 21-24; xlv, f. a, b, c, 1868; Lx, Cret. and Tert. Fl., p. 240, pl. 1, f. 6, 6a, 1883.

Miocene: Corral Hollow, California.

Eocene?: Port Graham, Alaska; Mackenzie River.

Canadian upper Laramie: Roche Percée, Souris River.

Taxites microphyllus Heer. Fl. Foss. Alask., p. 24, pl. i, f. 9, 9b, 1869.

Eocene?: Port Graham, Alaska.

Bull. 152—15

Taxites sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.
[Wood.]

Belly River series: South Saskatchewan.

Taxites sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887.
[Fossil wood.]

Upper Laramie group: Red Deer River; Wood End Depot, Canada.

Taxodites Europæus (Brougn.) Endl.=*Glyptostrobus europæus*.

TAXODIUM L. C. Richard. Ann. Mus. Paris, vol. xvi, p. 298, 1810.

Taxodium (*Glyptostrobus*) *brookense* Font.=*Glyptostrobus brookense*.

Taxodium brookense angustifolium Font.=*Glyptostrobus brookense angustifolius*.

Taxodium cuneatum Newby. Bost. Journ. Nat. Hist., vol. vii, p. 517, 1863; Dn., Trans. Roy. Soc. Canada, 1882, p. 25.

Upper Cretaceous: Nanaimo and Protection Island.

Kootanie series: British Columbia (no locality).

Taxodium (*Glyptostrobus*) **denticulatum** Font. Potomac Fl., p. 253, pl. cxxiv, f. 1, 1889.

Potomac formation: Kankeys, Virginia.

Taxodium distichum miocenum Heer. Mioc. Balt. Fl., p. 18, pl. ii; pl. iii, f. 6, 7, 1869.

Taxodium dubium (Sternb.) Heer. Fl. Tert. Helv., vol. i, p. 49, pl. xvii, f. 5-15, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874].

Abies Nevadensis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873].

Eocene: Elko Station, Nevada; Alaska?; Carbon?; Evanston.

Fort Union group: Montana.

Miocene: John Day Valley, Oregon.

Taxodium dubium (Sternb.) Heer.=*Taxodium distichum miocenum*.

Taxodium europæum Brongn.=*Glyptostrobus europæus*.

Taxodium (*Glyptostrobus*) **expansum** Font. Potomac Fl., p. 252, pl. cxxiii, f. 1, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Taxodium (*Glyptostrobus*) *fastigiatum* Font.=*Glyptostrobus fastigiatum*.

Taxodium occidentale Newby. Bost. Journ. Nat. Hist., vol. vii, p. 516, 1863; Ill. Cret. and Tert. Pl., pl. xi, f. 1-3, 1878.

Fort Union group: Yellowstone River, Montana.

Upper Laramie group: Canada.

Taxodium (*Glyptostrobus*) **ramosum** Font. Potomac Fl., p. 251, pl. cxxiii, f. 2, 3; cxxiv, f. 2; cxxvii, f. 1; cxxxii, f. 1; clxvi, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

Taxodium Tinajorum Heer. Fl. Foss. Alask., p. 22, pl. i, f. 1-5, 1869.

Eocene?: Port Graham, Alaska.

Taxodium Tinajorum? Heer, Lx. [Ann. Rept., 1871, p. 285] = Unknown.
[Not afterwards recognized by Lesquereux.]

Taxodium (Glyptostrobus) virginicum Font. Potomac Fl., p. 252, pl. cxi, f. 6, 1889.

Potomac formation: Near Potomac Run, Virginia.

Taxodium sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 10, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver.

TAXOXYLUM Unger. Chlor. Prot., p. 33, 1842.

Taxoxylon sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

Taxoxylon sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. I, p. 67, 1873.

Lower Cretaceous: British Columbia.

TAXUS (Tournefort) Linnæus. Syst., ed. i, 1735.

Taxus baccata L., Penhallow, 1890 = *Taxus minor*.

Taxus canadensis Willd., Penhallow (1896) = *Taxus minor*.

Taxus minor (Mx.) Britton.

Taxus baccata L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 321, 333, 1890.

Taxus canadensis Willd. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 67, 73, 1896.

Pleistocene: Don River and Don Valley, Toronto; Cape Breton; Fort Madison, Iowa; Solsgirth and Rolling River, Manitoba; Bloomington, Illinois.

Terminalia Radobojensis Heer, Lesquereux [1871] = *Magnolia Lesleyana*, *Tetranthera* Jacq. = *Malapœenna*.

Tetranthera præcursoria Lx. Cret. and Tert. Fl., p. 228, pl. xlviii, f. 2, 1883.

Fort Union group: Bad Lands, Dakota.

Tetranthera sessiliflora Lx. = *Litsea sessiliflora* and *L. Weediana*.

THINNFELDIA Ettingshausen. Abhandl. d. k. k. geol. Reichsanstalt, vol. i, abt. iii, no. 3, p. 2, 1852.

Thinnfeldia granulata Font. Potomac Fl., p. 111, pl. xxvi, f. 10-12; xxvii, f. 1-5, 8; pl. clxix, f. 1, 1889.

Potomac formation: Near Dutch Gap Canal and near Potomac Run, Virginia.

Thinnfeldia lanceolata Kn. Bull. U. S. Geol. Surv., no. 105, p. 49, pl. v, f. 5, 1893.

Laramie group: Bozeman coal field, Montana.

Thinnfeldia Lesquereuxiana Heer. = *Thinnfeldia subintegrifolia*.

Thinnfeldia montana nom. nov.

Thinnfeldia polymorpha * (Lx.) Kn. Proc. Biol. Soc. Wash., vol. vii, p. 153, 1892; Bull. U. S. Geol. Surv., no. 105, p. 47, pl. v [i], f. 1-4, 1893.

Salisburia polymorpha Lx. Am. Journ. Sci., 2d ser., vol. xxvii, p. 362, 1859 [nomen nudum]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873].

[* *Thinnfeldia polymorpha* (Lx.) Kn., 1892, preoccupied by *T. polymorpha* Ett., 1860.]

Laramie and Livingston group: Bozeman coal field. Montana

Thinnfeldia polymorpha (Lx.) Kn. = *Thinnfeldia montana*.

Thinnfeldia rotundiloba Font. Potomac Fl., p. 111, pl. xxvii, f. 6, 7, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

Thinnfeldia subintegrifolia (Lx.). n. comb.

Phyllocladus subintegrifolius Lx. Am. Journ. Sci., vol. xlvi, p. 92, 1868; Cret. Fl., p. 54, pl. i, f. 12, 1874; Fl. Dak. Gr., p. 34, pl. ii, f. 1-3, 1892.

Thinnfeldia Lesquereuxiana Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 37, pl. xlv, f. 9, 10; xlv, f. 11, 12a, b; Hollick, Trans. N. Y. Acad. Sci., vol. xi, p. 99, pl. iii, f. 6, 1892; Newby, Fl. Amboy Clays, p. 59, pl. xi, f. 1-17, 1895 [1896].

Dakota group: Kansas; Decatur, Nebraska.

Amboy clay: Cretaceous; Atane, Greenland.

Thinnfeldia variabilis Font. Potomac Fl., p. 110, pl. xvii, f. 3-7; xviii, f. 1-6, 1889.

Potomac formation: Near Brooke and near Potomac Run, Virginia.

Knoxville beds: Tehama County, California.

THUITES Sternberg. Vers., vol. i, Fasc. iii, p. 39, 1823.

Thuites crassus Lx. = *Brachyphyllum macrospermum*.

Thuites (*Chamaecyparis*) alaskensis Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 7-9, 1882 [1883].

Eocene?: Unga Island, Alaska.

Thuites callitrina Ung. Chlor. Prot., p. 22, pl. vi, f. 2, 18; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 371, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

Green River group: Castello's Ranch, Colorado.

Thuites kurrianus Dunk. = *Sphenolepidium kurrianum*.

Thuites Meriani Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 73, pl. xvi, f. 17, 18, 1873; Newby., Fl. Amboy Clays, p. 54, pl. x, f. 5, 1896.

Amboy clay: No location.

THUJA Linnaeus. Hort. Cliff., p. 449, 1737.

Thuja Garmani Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Cret. and Tert. Fl., p. 139, 1883 [1884].

Green River group: Elko Station, Nevada.

Thuja cretacea (Heer.) Newby. Fl. Amboy Clays, p. 53, pl. x, f. 1, 1a, 1895 [1896].

Libocedrus cretacea Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 49, pl. xxix, f. 1, 2; xliii, f. 14, 1882.

Amboy clay: South Amboy, New Jersey.

Thuja interrupta Newby. Later Extinct Floras, p. 42, 1868; Dn., Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 22, pl. i, f. 3, 4, 1886 [1887].

Fort Union group: Porcupine Creek; Fort Union, North Dakota.

Thuja occidentalis L. Spec. Pl., p. 1002, 1753; Dn., Can. Nat., vol. ii, p. 422, 1857; Geol. Hist. Pl., p. 229, 1888; Britton, Trans. N. Y. Acad. Sci., vol. v, p. 218, 1886.

Post-Pliocene: Montreal, Canada.

Pleistocene: Cedar Creek and Natural Bridge, Virginia; Marietta, Ohio.

Thuja sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887.
[Fossil wood.]

Canadian upper Laramie: Four hundred mile Point, forty-ninth parallel; Middle Fork Old Man River.

Thuja sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.
[Wood.]

Belly River series: Old Man River; Ribstone Creek; Twenty-Mile Creek.

Thuja sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

THYRSOPTERIS Kunze. Linnæa, vol. ix, p. 507, 1834.

Thyrsopteris alata Font. Potomac Fl., p. 124, pl. xxxvi, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

Thyrsopteris angustifolia Font. Potomac Fl., p. 131, pl. xlv, f. 4; xlv, f. 3; xlviii, f. 2; xlix, f. 3, 4; lv, f. 2; lviii, f. 8, 1889.

Potomac formation: Trents Reach, near Dutch Gap Canal, near Brooke, and near Potomac Run, Virginia.

Thyrsopteris angustiloba Font. Potomac Fl., p. 134, pl. xlviii, f. 3-5; lv, f. 3, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Trents Reach, and White House Bluff, Virginia.

Thyrsopteris bella Font. Potomac Fl., p. 139, pl. liii, f. 5; lv, f. 6, 7; lvi, f. 2, 5; lvii, f. 1, 5; lviii, f. 4, 1889.

Potomac formation: Fredericksburg, Trents Reach, White House Bluff, and near Dutch Gap Canal, Virginia.

Thyrsopteris brevifolia Font. Potomac Fl., p. 121, pl. xxiv, f. 5, 10.

Potomac formation: Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

Thyrsopteris brevipennis Font. Potomac Fl., p. 124, pl. xxxiv, f. 3; xxxvi, f. 2; xxxvii, f. 3, 9; xxxviii, f. 1; xli, f. 4, 1889.

Potomac formation: Dutch Gap Canal and Deep Bottom, Virginia; Baltimore, Maryland.

Kootanie: Great Falls, Montana.

Thyrsopteris crassinervis Font. Potomac Fl., p. 130, pl. xli, f. 1-3, 1889.

Potomac formation: Fredericksburg, Virginia.

Thyrsopteris crenata Font. Potomac Fl., p. 127, pl. xxxix, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Thyrsopteris decurrens Font. Potomac Fl., p. 130, pl. xliii, f. 7; xlv, f. 2, 4; xlix, f. 5-7, 1889.

Potomac formation: Dutch Gap Canal, Fredericksburg, near Brooke, near Potomac Run, Virginia.

Thyrsopteris densifolia Font. Potomac Fl., p. 129, pl. xxxix, f. 3; xl, f. 2-5; li, f. 5, 1889.

Potomac formation: Fredericksburg, and near Brooke, Virginia.

- Thyrsopteris dentata** Font. Potomac Fl., p. 121, pl. xxiv, f. 4, 6, 7, 9; xxv, f. 1, 2, 1889.
Potomac formation: Fredericksburg, Dutch Gap Canal, and near Potomac Run, Virginia.
- Thyrsopteris distans** Font. Potomac Fl., p. 134, pl. xlvii, f. 3; liv, f. 8, 1889.
Potomac formation: Near Brooke, Virginia.
- Thyrsopteris divaricata** Font. Potomac Fl., p. 125, pl. xxxvii, f. 5-8; clxx, f. 1, 1889.
Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.
- Thyrsopteris elliptica** Font. Potomac Fl., p. 133, pl. xxiv, f. 3; xlv, f. 1; l, f. 6, 9; li, f. 4, 6, 7; liv, f. 6; lv, f. 4; lvi, f. 6, 7; lvii, f. 6; lviii, f. 2, 1889.
Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.
- Thyrsopteris heteroloba** Font. Potomac Fl., p. 139, pl. liii, f. 4, 1889.
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris heteromorpha** Font. Potomac Fl., p. 136, pl. lii, f. 1, 1889.
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris heterophylla** Font. Potomac Fl., p. 142, pl. lviii, f. 3, 1889.
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris inæquipinnata** Font. Potomac Fl., p. 142, pl. lvii, f. 3, 8, 1889.
Potomac formation: Near Dutch Gap Canal, Virginia.
- Thyrsopteris insignis** Font. Potomac Fl., p. 127, pl. xxxix, f. 4; xl, f. 1; xli, f. 6; xlii, f. 1, 2, 4; xliii, f. 1, 3, 1889.
Potomac formation: Fredericksburg and near Potomac Run, Virginia.
Kootanie: Great Falls, Montana.
- Thyrsopteris insignis angustipennis** Font. Potomac Fl., p. 128, pl. xlii, f. 3; xliii, f. 2, 1889.
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris Meekiana** Font. Potomac Fl., p. 125, pl. xxxviii, f. 2-4, 8; l, f. 7, 8; li, f. 3, 1889.
Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia; Baltimore, Maryland.
- Thyrsopteris Meekiana angustiloba** Font. Potomac Fl., p. 126, pl. xxxviii, f. 5-7, 9; xliii, f. 8; xlv, f. 3; xlvii, f. 4; xlviii, f. 1; liv, f. 2, 11; lv, f. 1; lvi, f. 1, 3, 1889.
Potomac formation: Baltimore, Maryland; near Dutch Gap Canal, near Brooke, and Fredericksburg, Virginia.
- Thyrsopteris microloba** Font. Potomac Fl., p. 140, pl. lvii, f. 4, 1889.
Potomac formation: Near Dutch Gap Canal, Virginia.

Thyrsopteris microloba alata Font. Potomac Fl., p. 140, pl. lv, f. 5; lviii, f. 1, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

Thyrsopteris microphylla Font. Potomac Fl., p. 131, pl. xlv, f. 1, 2, 4, 5, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

Thyrsopteris nana Font. Potomac Fl., p. 141, pl. lvi, f. 4, 8, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Thyrsopteris nervosa Font. Potomac Fl., p. 122, pl. xxv, f. 4, 5, 16; xxxvii, f. 2, 4; xxxix, f. 5; xl, f. 6, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

Thyrsopteris obtusiloba Font. Potomac Fl., p. 143, pl. lviii, f. 7, 10, 1889.

Potomac formation: Dutch Gap Canal and near Potomac Run, Virginia.

Thyrsopteris pachyphylla Font. Potomac Fl., p. 135, pl. l, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

Thyrsopteris pachyrachis Font. Potomac Fl., p. 132, pl. xlvi, f. 3, 5; xlvii, f. 1, 2; xlix, f. 1, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Dutch Gap Canal, Virginia.

Thyrsopteris pectopteroides Font. Potomac Fl., p. 135, pl. li, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Thyrsopteris pinnatifida Font. Potomac Fl., p. 136, pl. li, f. 2; liv, f. 4, 5, 7; lvii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

Thyrsopteris rarinervis Font. Potomac Fl., p. 123, pl. xxvi, f. 6, 7; xliii, f. 4-6; xlv, f. 1, 2, 5; xlix, f. 2; clxix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, near Brooke, White House Bluff, and Trents Reach, Virginia.

Knoxville beds: Tehama County, California.

Kootanie: Great Falls, Montana.

Thyrsopteris retusa Font. Potomac Fl., p. 144, pl. lix, f. 10, 1889.

Potomac formation: Near Potomac Run, Virginia.

Thyrsopteris rhombifolia Font. Potomac Fl., p. 138, pl. lii, f. 5; liv, f. 1, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Thyrsopteris rhombiloba Font. Potomac Fl., p. 144, pl. lix, f. 7; lx, f. 8, 1889.

Potomac formation: Near Potomac Run, Virginia.

Thyrsopteris sphenopteroides Font. Potomac Fl., p. 143, pl. lviii, f. 6, 1889.

Potomac formation: Near Potomac Run, Virginia.

Thyrsopteris squarrosa Font. Potomac Fl., p. 143, pl. lix, f. 3, 1889.

Potomac formation: Near Potomac Run and Telegraph Station, Virginia.

Thyrsopteris varians Font. Potomac Fl., p. 137, pl. lii, f. 2-4; liii, f. 1-3; liv, f. 10; lvii, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Thyrsopteris virginica Font. Potomac Fl., p. 120, pl. xxiv, f. 1, 1889.

Potomac formation: Near Potomac Run, Virginia.

TILIA (Tournefort) Linnæus. Syst., ed. i, 1735.

Tilia alaskana Heer. Fl. Foss. Alask., p. 36, pl. x, f. 2, 3, 1869.

Eocene?: Port Graham, Alaska.

Tilia antiqua Newby. = *Viburnum antiquum*.

Tilia populifolia Lx. Cret. and Tert. Fl., p. 179, pl. xxxiv, f. 8, 9, 1883.

Green River group: Florissant, Colorado.

TILIAEPHYLLUM Newberry. Fl. Amboy Clays, p. 109, 1896.

Teliaephyllum dubium Newby. Fl. Amboy Clays, p. 109, pl. xv, f. 5, 1895 [1896].

Amboy clay: Fish House.

TMESIPTERIS Bernhardt. In Schrad. Journ., vol. ii, p. 131, 1800.

Tmesipteris Alleni (Lx.) Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 12, 1894.

Salvinia Alleni Lx. Tert. Fl., p. 65, pl. v, f. 11, 1878.

Ophioglossum Alleni Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 371, 1872 [1873].

Green River group: South Park, Colorado.

Todia? *Saportanea* Lx. = *Lomatia?* *Saportanea*.

Torreya Arnott, 1838 = *Tumion Rafinesque*, 1840.

Torreya densifolia Dn. = *Tumion densifolium*.

Torreya dicksonioides Dnl. = *Tumion dicksonioides*.

Torreya falcata Font. = *Tumion falcatum*.

Torreya oblanceolata Lx. = *Tumion oblanceolatum*.

Torreya virginica Font. = *Tumion virginicum*.

TOXYLON Rafinesque. In Am. Month. Mag., vol. ii, p. 18, 1817.

Toxylon pomiferum Raf.

Maclura aurantiaca Nutt. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 69, 72, 1896.

Pleistocene: Don River, Canada.

TRAPA Linnæus. Gen. Pl., ed. i, p. 359, 1737.

Trapa americana Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 733, pl. cii, f. 7a, 1898.

Payette formation: Idaho City, Idaho.

Trapa borealis Heer. Fl. Foss. Alask., p. 38, pl. viii, f. 9-14, 1869; Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, pl. xvi, f. 10, 1875.

Belly River series: Vermilion River.

Eocene?: Port Graham, Alaska.

Lower Laramie group: Red Deer and Rosebud rivers, Canada.

Trapa? microphylla Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 369, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 304, 1874 [1876]; Lx., Tert. Fl., p. 295, pl. lxi, f. 16-17a, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 64, pl. xxviii, f. 2-5, 1887.

? Neuropteris angulata Newby. Rept. Colo. River of the West, by Ives, p. 131, pl. iii, f. 5, 1861.

Upper Laramie group: Great Valley.

Fort Union group: Burns's Ranch, Montana.

Laramie group: Converse County, Wyoming.

Montana group: Point of Rocks, Wyoming.

Lower Laramie group: Bad Lands, Red Deer and Rosebud rivers, and Pincher Creek, Canada.

Trapa? occidentalis Kn. Eighteenth Ann. Rept. U. S. Geol. Surv. pt. iii, p. 734, pl. cii, f. 7b, 1898.

Payette formation: Idaho City, Idaho.

Trapa sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek coal," Wyoming.

TRICALYCITES Newberry. Fl. Amboy Clays, p. 132, 1895 [1896.]

Tricalycites papyraceus Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 30-38, 1895 [1896]; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 63, pl. clxxx, f. 8, 1894.

Cretaceous: Long Island.

Amboy clay: Woodbridge, New Jersey.

TRICARPELLITES Bowerbank. Hist. Foss. Fruits and Seeds, London Clay, p. 76, 1840.

Tricarpellites striatus Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 9-13, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Trunk No. 1 Font. Potomac Fl., p. 189, pl. clxxiv-clxxviii, 1889.

Potomac formation.

Trunk No. 2 Font. Potomac Fl., p. 191, pl. clxxix, clxxx, 1889.

Potomac formation: Maryland.

TSUGA Carrier. Trait. Conif., p. 185, 1855.

Tsuga Mertensiana (Bongn.) Carr. Kn., Jour. Geol., vol. iii, p. 531, 1895.

Interglacial: Muir Glacier, Alaska.

TUMION Rafinesque. Amen. Nat., p. 63, 1840.

Tumion densifolium (Dn.) n. comb.

Torreia densifolia Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25; pl. v, f. 20, 20a, 1882 [1883].

Upper Cretaceous: Protection Island.

Tumion dicksonioides (Dn.) n. comb.

Torreia dicksonioides Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 4, 1882 [1883].

———: Pine River, Northwest Territory.

Tumion falcatum (Font.) n. comb.

Torreya falcata Font. Potomac Fl., p. 235, pl. cxiii, f. 4, 1889.

Potomac formation: Near Potomac Run, Virginia.

Tumion oblanceolatum (Lx.) n. comb.

Torreya oblanceolata Lx. Cret. and Tert. Fl., p. 30, pl. i, f. 2, 1883.

Dakota group?: Near Golden, Colorado.

Tumion virginicum (Font.) n. comb.

Torreya virginica Font. Potomac Fl., p. 234, pl. cix, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

TYPHA Linnaeus. Syst., ed. i, 1735.

Typha latifolia? L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 73, 1896.

Pleistocene: Besserers Wharf, Ottawa River.

Typha latissima Al. Br. in Stizenberger. Versteinerungen, p. 75;

Lx., Cret. and Tert. Fl., p. 141, pl. xxiii, f. 4, 4a, 1883.

Green River group: Uinta County, formerly but incorrectly called, Randolph County, Wyoming.

TYSONIA Fontaine. Potomac Fl., p. 186, 1889.

Tysonia marylandica Font. = *Cycadeoidea marylandica*.

Ulmmania Newby. = *Ullmannia*.

ULLMANNIA Göppert. Monogr. Foss. Conif., p. 185, 1850.

Ullmannia sp. (Newby).

Ulmmania sp., Newby. Proc. Lyc. Nat. Hist. N. Y., 2d ser., Jan. 3 to Mar. 3, 1873, p. 10, 1873.

Cretaceous: Keyport, New Jersey.

Ulmiphyllum Font. (1889) = *Ulmophyllum* Ett. (1883).

Ulmiphyllum brookense Font. = *Ulmophyllum brookense*.

Ulmiphyllum crassinerve Font. = *Ulmophyllum crassinerve*.

Ulmiphyllum tenuinerve Font. = *Ulmophyllum tenuinerve*.

ULMITES Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890.

Ulmites pusillus Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 24, 1890.

Eocene?: North Similkameen River, British Columbia.

ULMOPHYLLUM Ettingshausen. Tert. Fl. Austr.: Denkschr. Wien. Akad., vol. xlvii, abt. i, p. 26, 1883.

***Ulmophyllum brookense* (Font.).**

Ulmophyllum brookense Font. Potomac Fl., p. 312, pl. clv, f. 8; *CIXIII*, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

***Ulmophyllum crassinerve* (Font.)**

Ulmophyllum crassinerve Font., Potomac Fl., p. 313, pl. clviii, f. 6, 7, 1889.

Potomac formation: Deep Bottom, Virginia.

***Ulmophyllum priscum* Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 59, pl. viii, f. 28, 1893 [1894].**

Upper Cretaceous: Port McNeill, Vancouver Island.

***Ulmophyllum tenuinerve* (Font.)**

Ulmophyllum tenuinerve Font. Potomac Fl., p. 313, pl. clviii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

ULMUS* (Tournefort) Linnæus. Syst., ed. i, 1735.**Ulmus affinis* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 16, pl. iv, f. 4, 5, 1878.**

Miocene: Table Mountain, California.

***Ulmus alata*? Michx. Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.**

Pleistocene: Banks of Mississippi, near Columbus, Kentucky.

***Ulmus americana* L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892; Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 68, 73, 1896.**

Miocene?: Bridgeton, New Jersey.

Pleistocene: Don River, Canada.

***Ulmus antedecens* Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 49, 1888.**

Denver group: Golden, Colorado.

***Ulmus Braunii* Heer. Fl. Tert. Helv., vol. ii, p. 59, pl. lxxix, f. 14-21, 1856; Lx., Cret. and Tert. Fl., p. 161, pl. xxvii, f. 1-4, 8, 1883.**

Green River group: Florissant, Colorado.

Eocene?: Kamloops, British Columbia.

***Ulmus Brownellii* Lx. Cret. and Tert. Fl., p. 160, pl. xxviii, f. 2, 4, 1883.**

Green River group: Florissant, Colorado, White River.

***Ulmus californica* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 15, pl. iv, f. 1, 2; pl. vi, f. 7a, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 3, 4, 7, 1883.**

Miocene: Chalk Bluffs and Table Mountain, California.

Miocene: John Day Valley, Oregon.

***Ulmus dubia* Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 29, 1882 [1883].**

Upper Cretaceous: Baynes Sound.

***Ulmus grandifolia* Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].**

Tertiary: Tongue River, Wyoming.

Ulmus Hilliae Lx. Cret. and Tert. Fl., p. 160, pl. xxviii, f. 1, 3, 1883.

Green River group: Florissant, Colorado.

Ulmus? irregularis Lx. = *Ficus* irregularis.

Ulmus minima Ward. Bull. U. S. Geol. Surv., no. 37, p. 45, pl. xxiii, f. 3, 4, 1887.

Fort Union group: Clear Creek, Montana.

Ulmus orbicularis Ward. Bull. U. S. Geol. Surv., no. 37, p. 46, pl. xxiii, f. 6, 1887.

Fort Union group: Clear Creek, Montana.

Ulmus planeroides Ward. Bull. U. S. Geol. Surv., no. 37, p. 44, pl. xxiii, f. 1, 2, 1887.

Fort Union group: Clear Creek, Montana.

Ulmus præcursor Dn. Trans. Roy. Soc. Canada, vol. iv. sec. iv, p. 28, pl. ii, f. 11, 1886 [1887].

Upper Laramie group: Canada (exact locality not given).

Ulmus plurinervia Ung. Chlor. Prot., p. 95, pl. xxv, f. 1-4, 1847; Heer, Fl. Foss. Alask., p. 34, pl. v, f. 1, 1869.

Eocene?: Port Graham, Alaska.

Miocene: John Day Valley, Oregon.

Ulmus pseudo-americana Lx. Cret. and Tert. Fl., p. 249, pl. liv, f. 10, 1883.

Miocene: Bridge Creek and John Day Valley, Oregon.

Ulmus pseudo-fulva Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 16, pl. iv, f. 3, 1878.

Miocene: Chalk Bluffs, California.

Ulmus quercifolia Ung. Chlor. Prot., p. 96, pl. xxv, f. 5, 1847; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 49, 1888.

Denver group: Golden, Colorado.

Ulmus racemosa Thomas. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 323, 1890; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Pleistocene: Don River, Toronto.

Glacial: Morgantown, West Virginia.

Ulmus rhamnifolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 45, pl. xxiii, f. 5, 1887.

Fort Union group: Clear Creek, Montana.

Ulmus sorbifolia Göpp. Zeitschr. Deutsch. geol. Gesell., vol. iv, p. 492, 1852; Lx., Proc. U. S. Nat. Mus., vol. v, p. 447, 1882.

Eocene?: Cook Inlet, Alaska.

Ulmus speciosa Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

Ulmus tenuinervis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 188, pl. xxvi, f. 1-3, 1878.

Green River group: Florissant, Colorado.

Ulmus sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Fort Pierre series: Head of Swift Current.

Undetermined fern Font. Potomac Fl., p. 119, pl. xxi, f. 12, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Undetermined fern in circinate vernation sp., Font. Potomac Fl., p. 145, pl. lix, f. 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

Undetermined plant (a) Font. Potomac Fl., p. 274, pl. cxxxvi, f. 13, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (b) Font. Potomac Fl., p. 274, pl. cxxxvi, f. 14, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (c) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (d) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 2, 3, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (e) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (f) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Undetermined plant (g) Font. Potomac Fl., p. 275, pl. clxix, f. 4, 5, 1889.

Potomac formation: Baltimore, Maryland.

Undetermined plant (h) Font. Potomac Fl., p. 276, pl. clxix, f. 9, 1889.

Potomac formation: Baltimore, Maryland.

Undetermined plant (i) Font. Potomac Fl., p. 276, pl. clxxiii, f. 11, 1889.

Potomac formation: Baltimore, Maryland.

VACCINOPHYLLUM Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890.

Vaccinophyllum quæstum Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 23, 1890.

Eocene?: Similkameen River, British Columbia.

VACCINIUM Linnæus. Syst., ed. i, 1735.

Vaccinium coloradense Lx. Proc. U. S. Nat Mus., vol. x, p. 42, pl. iii, f. 4, 5, 1887.

Denver group: Silver Cliff, Colorado.

Vaccinium Friesii Heer. Fl. Foss. Alask., p. 35, pl. viii, f. 4, 1869.

Eocene?: Port Graham, Alaska.

Vaccinium reticulatum Al. Br. in Stizenberger. Verzeichniss, p. 82, 1851; Lx., Tert. Fl., p. 235, pl. lix, f. 6, 1878.

Eocene?: Cook Inlet, Alaska.

Green River group: Florissant, Colorado.

Vaccinium uliginosum L. Macoun in Coleman Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

VALLISNERIA Michaux. Ex Linnæus, Gen. Pl., ed. i, p. 300, 1737.

Vallisneria sp., Penhallow. Bull. Geol. Soc. Am., vol. i, p. 325, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 73, 1896.

Pleistocene: Rolling River, Manitoba; Besserers Wharf, Ottawa River.

VIBURNITES Lesquereux. Fl. Dak. Gr., p. 124, 1892.

Viburnites crassus Lx. Fl. Dak. Gr., p. 124, pl. xlv, f. 1-4, 1892.

Dakota group: Kansas.

Viburnites Evansanus Ward. Journ. Geol., vol. ii, p. 261, 262, 1894.

Dakota group: Black Hills, South Dakota.

Viburnites Masoni Lx. Fl. Dak. Gr., p. 125, pl. xlv, f. 5, 1892.

Dakota group: Kansas.

VIBURNUM Linnæus. Syst., ed. i, 1735.

Viburnum anceps Lx. = *Platanus rhomboidea*.

Viburnum antiquum (Newby.) Hollick. MSS.

Viburnum tilioides Ward. Bull. U. S. Geol. Surv., no. 37, p. 107, pl. 1, f. 1-3; pl. li, f. 1-8; pl. lii, f. 1, 2, 1887.

Tilia antiqua Newby. Later Extinct Floras, p. 52, 1868.

Fort Union group: Clear Creek, Montana.

Denver group: Golden, Colorado.

Viburnum asperum Newby. Later Extinct Floras, p. 54, 1868.

Fort Union group: Cracker Box and Seven-Mile creeks, Montana; Bad Lands, Dakota.

Canadian Upper Laramie: North Saskatchewan; Souris River.

Viburnum betulæfolia Ward. Bull. U. S. Geol. Surv., no. 37, p. 114, pl. lvii, f. 4, 1887.

Fort Union group: Burns's Ranch, Montana.

Viburnum bridgetonense Britton in Hollick. Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

Viburnum calgarianum Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 18, 1885 [1886]; op. cit., vol. iv, p. 29, pl. ii, f. 14, 1886 [1887].

Canadian upper Laramie: Calgary, Canada; Shaganappi Point.

Viburnum contortum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv., p. 396, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

Viburnum cuneatum Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Viburnum dakotense Lx. Cret. and Tert. Fl., p. 231, pl. xlviA, f. 9, 1883.

Fort Union group: Bad Lands, North Dakota.

Viburnum Dentoni Lx. Cret. and Tert. Fl., p. 231, pl. xlix, f. 2, 3, 1883.

Fort Union group: Bad Lands, North Dakota?

Viburnum dichotomum Lx. Ann. Rept., op. cit., p. 399, 1872 [1873]; Tert. Fl., p. 225, pl. xxxviii, f. 6, 1878.

Viburnum rotundifolium Lx. Ann. Rept., op. cit., p. 305, 1874 [1876]; Tert. Fl., p. 225, pl. xxxvii, f. 12; pl. xxxviii, f. 10; pl. lxi, f. 22, 1878.

Viburnum Whymperi Heer. Lx., Ann. Rept., op. cit., p. 395, 1872 [1873]; Tert. Fl., p. 225, pl. xxxviii, f. 7; pl. lxi, f. 23, 1878.

Laramie group: Black Buttes and Point of Rocks, Wyoming.

Viburnum ellsworthianum Lx. Fl. Dak. Gr., p. 121, pl. xxi, f. 6, 1892.

Dakota group: Kansas.

Viburnum elongatum Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. liv, f. 4, 5, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum erectum Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. lv, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum finale Ward. Bull. U. S. Geol. Surv., no. 37, p. 115, pl. lvii, f. 5, 1887.

Fort Union group: Iron Bluff, Montana.

Viburnum goldianum Lx. Tert. Fl., p. 227, pl. lx, f. 2-2c, 1878.

Denver group: Golden, Colorado.

Viburnum grandidentatum Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Viburnum grewiopsidium Lx. Fl. Dak. Gr., p. 120, pl. xxi, f. 4, 1892.

Dakota group: Kansas.

Viburnum inæquilaterale Lx. Fl. Dak. Gr., p. 119, pl. xxi, f. 2, 3, 1892.

Dakota group, Kansas.

Viburnum integrifolium Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. clxxvii, f. 7, 1894; Newby., Fl. Amboy Clays, p. 125, pl. xli, f. 1, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.

Viburnum Lakesii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 401, 1873 [1874]; Tert. Fl., p. 226, pl. xxxvii, f. 13, 1878.

Denver group: Golden, Colorado.

—?: Northwest Territory.

Viburnum lanceolatum Newby. Later Extinct Floras, p. 54, 1868.

Fort Union group: Fort Union, North Dakota.

Upper Laramie group: Porcupine Creek.

Viburnum Lesquereuxii Ward in Lx. Fl. Dak. Gr., p. 121, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii commune Lx. Fl. Dak. Gr., p. 122, pl. liii, f. 2, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii cordifolium Lx. Fl. Dak. Gr., p. 122, pl. lii, f. 9, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii lanceolatum Lx. Fl. Dak. Gr., p. 123, pl. liii, f. 3, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii latus Lx. Fl. Dak. Gr., p. 123, pl. lii, f. 10, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii longifolium Lx. Fl. Dak. Gr., p. 122, pl. liii, f. 1, 1892.

Dakota group: Kansas.

Viburnum Lesquereuxii rotundifolium Lx. Fl. Dak. Gr., p. 122, pl. lii, f. 8, 1892.

Dakota group: Kansas.

Viburnum? Lesquereuxii tenuifolium Lx. Fl. Dak. Gr., p. 123, pl. lxiv, f. 13, 1892.

Dakota group: Kansas.

Viburnum limpidum Ward. Bull. U. S. Geol. Surv., no. 37, p. 110, pl. liii, f. 3-6, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum macrodontum Ward. Bull. U. S. Geol. Surv., no. 37, p. 110, pl. liii, f. 2, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum marginatum Lx. = *Platanus marginata*.

Viburnum Newberrianum Ward. Bull. U. S. Geol. Surv., no. 37, p. 113, pl. lv, f. 4-9, 1887.

Fort Union group: Cracker Box Creek, Montana.

Viburnum Nordenskiöldi Heer. Fl. Foss. Alask., p. 36, pl. iii, f. 13, 1869.

Eocene?: Neniltschik, Alaska.

Fort Union group: Clear Creek, Montana; Little Missouri, Gladstone, and Bad Lands, North Dakota.

Viburnum oppositinerve Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. lv, f. 1, 2, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum oxycoccoides Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886]; op. cit., vol. iv, p. 29, pl. ii, f. 15, 1886 [1887].

Upper Laramie group: Calgary, Shaganappi Point, Canada.

Viburnum paucidentatum Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

Viburnum perfectum Ward. Bull. U. S. Geol. Surv., no. 37, p. 109, pl. lii, f. 3, 4; pl. liii, f. 1, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum perplexum Ward. Bull. U. S. Geol. Surv., no. 37, p. 111, pl. liv, f. 1, 1887.

Fort Union group: Clear Creek, Montana.

Viburnum platanoides Lx.=*Platanus platanoides*.

Viburnum pubescens Pursh. Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

——: Porcupine Creek.

Viburnum robustum Lx. Fl. Dak. Gr., p. 120, pl. xx, f. 4-6, 1892.

Dakota group: Kansas.

Viburnum rotundifolium Lx.=*Viburnum dichotomum*.

Viburnum saskatchuense Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Canadian upper Laramie: North Saskatchewan.

Viburnum solitarium Lx. Tert. Fl., p. 227, pl. lx, f. 3, 1878.

Denver group: Golden, Colorado.

Viburnum sphenophyllum Kn. in Lx. Fl. Dak. Gr., p. 123, pl. liii, f. 4, 1892.

Dakota group: Kansas.

Viburnum tilioides Ward=*Viburnum antiquum*.

Viburnum Whymperi Heer. Fl. Foss. Aret., vol. ii, abt. iv, p. 475, pl. xlvi, f. 1b, 1869; Lx., Tert. Fl., p. 225, pl. xxxviii, f. 7; lxi, f. 23, 1878.

Fort Union group: Clear Creek, Montana.

Miocene: Shasta County, California.

Viburnum sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134.

Fort Union group: Lightning Creek, Converse County, Wyoming.

VITIPHYLLUM Fontaine. Potomac Fl., p. 308, 1889.

Vitiphyllum crassifolium Font. Potomac Fl., p. 308, pl. cl, f. 9, 10, 1889.

Potomac formation: Potomac Run, Virginia.

Vitiphyllum multifidum Font. Potomac Fl., p. 309, pl. clxxiii, f. 1-9, 1889.

Potomac formation: Baltimore, Maryland.

Vitiphyllum parvifolium Font. Potomac Fl., p. 309, pl. clxxii, f. 11, 12, 1889.

Potomac formation: Baltimore, Maryland.

VITIS (Tournefort) Linnaeus. Syst., ed. i, 1735.

Vitis Bruneri Ward. Bull. U. S. Geol. Surv., no. 37, p. 69, pl. xxxii, f. 1, 2, 1887.

Vitis carbonensis Ward. Loc. cit., p. 70, pl. xxxii, f. 3.

Laramie group: Carbon, Wyoming.

Vitis crenata Heer. Fl. Foss. Alask., p. 36, pl. viii, f. 6, 1869.

Eocene?: Port Graham, Alaska.

Vitis cuspidata Ward. Bull. U. S. Geol. Surv., no. 37, p. 71 pl. xxxii, f. 6-8, 1887.

Fort Union group: Burns's Ranch and Seven-Mile Creek, Montana.

Vitis islandica (?) Heer. Fl. Foss. Arct., vol. i, p. 150, pl. xxvi, f. 1e, f, 7a; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 10, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Montana group?: Point of Rocks, Wyoming.

Vitis Olriki Heer. Fl. Foss. Arct., vol. i, p. 120, p. xlviii, f. 1, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 12, 1871 [1872]; Tert. Fl., p. 241, pl. xli, f. 8, 1878.

Denver group: Mount Bross, Middle Park, Colorado.

Laramie group?: Evanston, Wyoming; Raton Mountains, New Mexico?

Vitis rotundifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene?: Admiralty Inlet, Alaska.

Vitis sparsa Lx. Tert. Fl., p. 241, pl. lx, f. 24, 1878.

Laramie group: Black Buttes, Wyoming.

Vitis tricuspidata Heer, Lx.=*Cissus tricuspidata*.

Vitis Xantholithensis Ward. Bull. U. S. Geol. Surv., no. 37, p. 71, pl. xxxii, f. 4, 5, 1887.

Fort Union group: Burns's Ranch, Montana.

Vitus sp.? Lx. Proc. U. S. Nat. Mus., vol. xi, p. 35, 1888.

Miocene: Contra Costa, California.

WEINMANNIA Linnæus. Syst., ed. x, p. 1005, 1759.

Weinmannia Haydenii Lx. Cret. and Tert. Fl., p. 178, pl. xlii f. 1-7 1883.

Rhus Haydenii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874]; Tert. Fl., p. 294, pl. lviii, f. 12, 1878.

Green River group: Middle Park and Florissant, Colorado.

Weinmannia integrifolia Lx. Cret. and Tert. Fl., p. 178, pl. xlii, f. 8-13, 1883.

Green River group: Florissant, Colorado.

Weinmannia obtusifolia Lx. Cret. and Tert. Fl., p. 178, pl. xli, f. 4-10, 1883.

Green River group: Florissant, Colorado.

Weinmannia rosæfolia Lx. = *Rhus rosæfolia*.

WIDDRINGTONIA Endlicher. Cat. Hort. Vindob., vol. i, p. 209, 1842.

Widdringtonia complanata Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 366, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1874 [1876]; Tert. Fl., p. 72, pl. lxii, f. 13, 14, 1878.

Laramie group: Point of Rocks, Wyoming.

Widdringtonia linguæfolia Lx. Cret. and Tert. Fl., p. 139, pl. xxi, f. 14, 14a, 1883.

Glyptostrobus europæus (Brongn.) Heer. Fl. Tert. Helv., vol. i, p. 51, pl. xix; xx, 1855; Tert. Fl., p. 74, pl. vii, f. 1, 2, 1878.

Green River group: Florissant, Colorado.

WIDDRINGTONITES Endlicher. Synop. Conif., p. 271, 1847.

Widdringtonites Reichii (Ett.) Heer. Fl. Foss. Aret., vol. vi, abt. ii, p. 51, pl. xxviii, f. 5, 1882; Newby., Fl. Amboy Clays, p. 57, pl. viii, f. 1-5, 1895 [1896].

Frenelites Reichii Ett. Kreidefl. v. Niedersch., p. 246, pl. i, f. 10a-10c, 18—.

Amboy clay: New Jersey.

Widdringtonites subtilis Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 101, pl. xxviii, f. 1, 1b, 1874; Newby., Fl. Amboy Clays, p. 57, pl. x, f. 2-4, 1895 [1896].

Amboy clay: Woodbridge and South Amboy, New Jersey.

Cretaceous: Marthas Vineyard.

WILLIAMSONIA Carruthers. Trans. Linn. Soc. London, vol. xxvi, p. 680, 1868.

Williamsonia elocata Lx. Fl. Dak. Gr., p. 87, pl. ii, f. 9, 9a, 1892.

Dakota group: Kansas.

Williamsonia problematica (Newby.) Ward=*Palæanthus problematicus*.

Williamsonia recentior Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 12, pl. iv, f. 1, 1885 [1886].

Mill Creek series: Mill Creek.

Williamsonia? Riesii Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 37, pl. i, f. 2, 3, 1892.

Cretaceous: Staten Island.

Williamsonia Smockii Newby. Fl. Amboy Clays, p. 127, pl. xxxvi, f. 1-8, 1895 [1896].

Amboy clay, New Jersey.

Williamsonia texana Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 1, 2, 1893.

Trinity division: Glenrose, Texas.

Williamsonia virginiensis Font. Potomac Fl., p. 273, pl. cxxxiii, f. 5-7; clxv, f. 5, 1889.

Potomac formation: Trents Reach and near Dutch Gap Canal, Virginia.

Williamsonia? sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 87, 1892 [1893].

Kootanie: Anthracite, British Columbia.

WINCHELLIA Lesquereux. Am. Geol., vol. xii, p. 209, 1893.

Winchellia triphylla Lx. Am. Geol., vol. xii, no. 4, p. 209, pl. viii, 1893.

Cretaceous: Yellowstone, near mouth of Powder River, Montana.

WOODWARDIA J. E. Smith. Mem. Acad. Tor., vol. v, p. 411, 1793.
Woodwardia latiloba Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1873 [1874]; Tert. Fl., p. 54, pl. iii, f. 1, 1a, 1878.

Woodwardialatiloba minor Lx. Ann. Rept., op. cit., p. 391, 1873 [1874]; Tert. Fl., p. 54, pl. iv, f. 9, 9a, 1878.

Denver Group: Golden, Colorado. •

Woodwardia latiloba minor Lx. = *Woodwardia latiloba*.

Woodwardia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.
 Laramie group?: North Fork Dutton Creek, Wyoming.

Woodwardia sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.
 Montana formation: Point of Rocks, Wyoming.

ZAMIA Linnaeus. Sp. Pl., ed. ii, p. 1659, 1763.

Zamia Washingtoniana Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 350, pl. ii, f. 6, 1895.

Potomac formation: Mount Vernon, Virginia.

ZAMIOPSIS Fontaine. Potomac Fl., p. 160, 1889.

Zamiopsis insignis Font. Potomac Fl., p. 162, pl. lxii, f. 3; lxiv, f. 1, 3; lxv, f. 4-6; lxvi, f. 2; lxvii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamiopsis laciniata Font. Potomac Fl., p. 164, pl. lxvi, f. 1, 5-8, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamiopsis longipennis Font. Potomac Fl., p. 164, pl. lxi, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamiopsis petiolata Font. Potomac Fl., p. 166, pl. lxvi, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamiopsis pinnatifida Font. Potomac Fl., p. 161, pl. lxi, f. 7; lxii, f. 5; lxiv, f. 2; lxvii, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamiostrobus mirabilis Lx. = *Cycadeoidea mirabilis*.

ZAMITES Brongniart. Prod. Hist. Vég. Foss., p. 94, Paris, 1828.

Zamites acutipennis Heer. Zeitschr. Deutsch. geol. Gesell., vol. xxiv, p. 161, 1872; Dn., Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 7, pl. i, f. 5, 1885 [1886].

Kootanie: Martin Creek, British Columbia; Great Falls, Montana.

Zamites apertus Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 4, 5, 1891.

Kootanie: Great Falls, Montana.

Zamites borealis Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 66, pl. xiv, f. 13, 14; xv, f. 1, 2, 1873; Newby., Am. Journ. Sci., vol. xli, p. 197, 1891.

Kootanie: Great Falls, Montana.

Zamites crassinervis Font. Potomac Fl., p. 172, pl. lxix, f. 4; lxxxiii, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamites distantinervis Font. Potomac Fl., p. 172, pl. lxxxiii, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

Zamites montana Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 6, 6a, 1885 [1886].

Kootanie: Martin Creek, Kootanie Pass, and Anthracite, British Columbia.

Zamites montanensis Font. Proc. U. S. Nat. Mus., vol. xv, p. 494, pl. lxxxiv, f. 4, 1892.

Kootanie: Great Falls, Montana.

Zamites ovalis Font. Potomac Fl., p. 173, pl. lxxxv, f. 4; clxx, f. 3, 1889.

Potomac formation: Dutch Gap Canal, near Potomac Run, and near Telegraph Station, Virginia.

Zamites subfalcatus Font. Potomac Fl., p. 173, pl. lxxxiv, f. 13; lxxxv, f. 3, 1889.

Potomac formation: Kankeys, Virginia.

Zamites tenuinervis Font. Potomac Fl., p. 171, pl. lxvii, f. 1; pl. lxix, f. 2; lxx, f. 1; lxxv, f. 3; lxxvi, f. 7; lxxviii, f. 6; lxxxiv, f. 7, 1889.

Potomac formation: Fredericksburg, Kankeys, Dutch Gap Canal, and near Telegraph Station, Virginia.

Trinity division: Glenrose, Texas.

Zamites sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 4, 1885 [1886].

Kootanie: Kootanie Pass.

Zamites sp., Font. Potomac Fl., p. 173, pl. lxxxiv, f. 12, 1889.

Potomac formation: Kankeys, Virginia.

Zamites sp., Lx. Fl. Dak. Gr., p. 26, pl. i, f. 8, 1892.

Dakota group: Kansas.

Zanthoxylon Walt., Fl. Carol., p. 52, 243, 1878 = *Zanthoxylum* L.

ZANTHOXYLUM Linnaeus. Hort. Cliff., p. 487, 1737.

Zanthoxylum diversifolium Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 33, pl. viii, f. 14, 15, 1878.

Miocene: California.

Zanthoxylum dubium Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 15, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Fischers Peak, New Mexico.

Zanthoxylum spireæfolium Lx. Cret. and Tert. Fl., p. 196, pl. xl, f. 1-3, 1883.

Green River group: Florissant, Colorado.

ZINGIBERITES Heer. Fl. Tert. Helv., vol. iii, p. 172, 1859.

Zingiberites dubius Lx. Tert. Fl., p. 95, pl. xvi, f. 1, 1878.

Zingiberites? undulatus * Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]. [*Preoccupied by *Z. undulatus* Heer, Balt. Fl., p. 64.]

Denver group: Golden, Colorado.

Zingiberites undulatus Lx. = *Zingiberites dubius*.

ZIZYPHUS Tournefort. Ex. Linnæus, Syst., ed. i, 1735.

Zizyphus Beckwithii Lx. Cret. and Tert. Fl., p. 125, pl. xix, f. 5, 1883.

Denver group: Golden, Colorado.

Zizyphus cinnamomoides Lx. Tert. Fl., p. 277, pl. lii, f. 7, 8, 1878.

Ceanothus cinnamomoides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872].

Green River group: Green River Station, Wyoming.

Fort Union group: Seven-Mile Creek, Montana.

Zizyphus dakotensis Lx. Fl. Dak. Gr., p. 167, pl. xxxvi, f. 4-7, 1892.

Dakota group: Kansas.

Zizyphus distortus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 404, 1873 [1874]; Tert. Fl., p. 275, pl. li, f. 7-9, 1878.

Denver group: Golden, Colorado.

Zizyphus elegans Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxvii, f. 9, 10, 1894.

Cretaceous: Glen Cove, Long Island.

Zizyphus fibrillosus Lx. Tert. Fl., p. 276, pl. lii, f. 1-6, 1878.

Ceanothus fibrillosus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873].

Denver group: Golden, Colorado.

Zizyphus hyperboreus? Heer Lx. = *Zizyphus Lesquereuxii*.

Zizyphus Lesquereuxii nom. nov.

Zizyphus hyperboreus? Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 389, 1872 [1873]; Tert. Fl., p. 276, pl. li, f. 15, 1878. [Not *Z. hyperboreus* of Heer.]

Denver group: Golden, Colorado.

Laramie group?: Carbon, Wyoming.

Zizyphus Lewisiana Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxx, f. 13, 1894.

Cretaceous: Oak Neck, Long Island.

Zizyphus longifolia Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene: Green River, Wyoming.

Zizyphus Meekii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 388, 1872 [1873]; Tert. Fl., p. 275, pl. li, f. 10-14, 1878; Ward, Bull.

U. S. Geol. Surv., no. 37, p. 74, pl. xxxiii, f. 5, 6, 1887.

Denver group: Mount Bross, Middle Park, Colorado.

Laramie group: Black Buttes, Wyoming.

Laramie group?: Carbon, Wyoming.

Livingston beds: Bozeman coal field, Montana.

Zizyphus microphyllus Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 28, pl. viii, f. 9, 1878.

Miocene: Chalk Bluffs, California.

Zizyphus piperoides Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 28, pl. viii, f. 10, 11, 1878.

Miocene: Chalk Bluffs, California.

Zizyphus serrulatus Ward. Bull. U. S. Geol. Surv., no. 37, p. 73, pl. xxxiii, f. 3, 4, 1887.

Fort Union group: Burns's Ranch, Montana.

Zizyphus Townsendi Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 229, pl. ix, f. 8, 9, 1894.

Eocene?: Herenden Bay, Alaska.

Zizyphus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

Zizyphus sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 148, 1897.

Laramie group: Rock Springs, Wyoming.

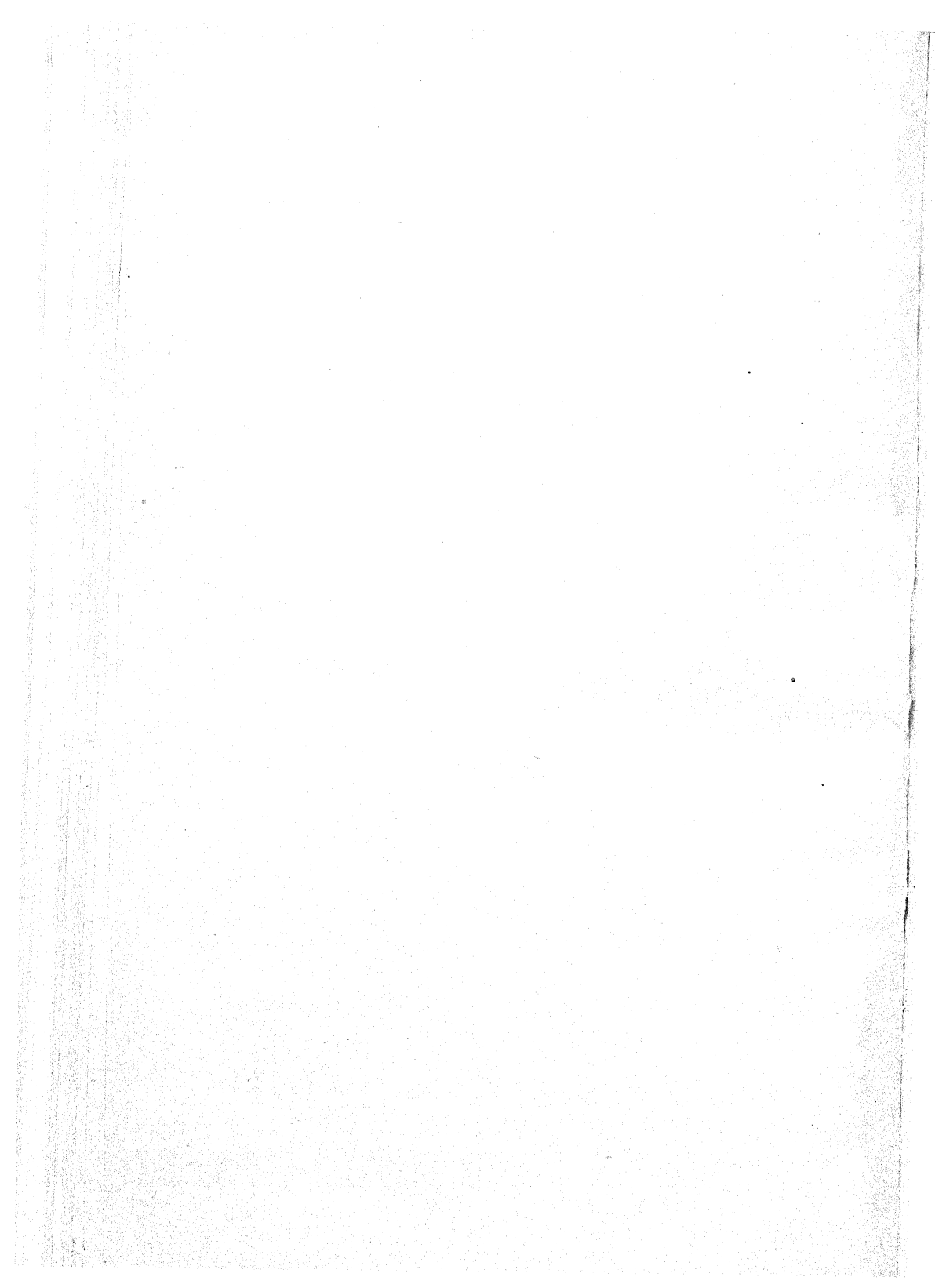
Zonarites digitatus (Brongn.) Gein.

Ficoides digitatus Brongn. Lx., Ann. Rept., op. cit., p. 421, 1872 [1873]; Hist. d. Vég. Foss., p. 69, pl. ix, f. 1, 1828.

Dakota group: Kansas.

Zostera marina L. Paisley, Can. Nat., 2d ser., vol. vii, p. 270, 1875.

Post-Pliocene: Bathurst, New Brunswick.



ADVERTISEMENT.

[Bulletin 152.]

The statute approved March 3, 1879, establishing the United States Geological Survey, contains the following provisions:

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classification of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization; and the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

Except in those cases in which an extra number of any special memoir or report has been supplied to the Survey by resolution of Congress or has been ordered by the Secretary of the Interior, this office has no copies for gratuitous distribution.

ANNUAL REPORTS.

I. First Annual Report of the United States Geological Survey, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Second Annual Report of the United States Geological Survey, 1880-'81, by J. W. Powell. 1882. 8°. lv, 588 pp. 62 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. 1884. 8°. xxxii, 473 pp. 85 pl. and maps.

V. Fifth Annual Report of the United States Geological Survey, 1883-'84, by J. W. Powell. 1885. 8°. xxxvi, 469 pp. 58 pl. and maps.

VI. Sixth Annual Report of the United States Geological Survey, 1884-'85, by J. W. Powell. 1885. 8°. xxix, 570 pp. 65 pl. and maps.

VII. Seventh Annual Report of the United States Geological Survey, 1885-'86, by J. W. Powell. 1888. 8°. xx, 656 pp. 71 pl. and maps.

VIII. Eighth Annual Report of the United States Geological Survey, 1886-'87, by J. W. Powell. 1889. 8°. 2 pt. xix, 474, xii pp. 53 pl. and maps; 1 p.l., 475-1063 pp. 54-76 pl. and maps.

IX. Ninth Annual Report of the United States Geological Survey, 1887-'88, by J. W. Powell. 1889. 8°. xiii, 717 pp. 88 pl. and maps.

X. Tenth Annual Report of the United States Geological Survey, 1888-'89, by J. W. Powell. 1890. 8°. 2 pt. xv, 774 pp. 98 pl. and maps; viii, 123 pp.

XI. Eleventh Annual Report of the United States Geological Survey, 1889-'90, by J. W. Powell. 1891. 8°. 2 pt. xv, 757 pp. 66 pl. and maps; ix, 351 pp. 30 pl.

XII. Twelfth Annual Report of the United States Geological Survey, 1890-'91, by J. W. Powell. 1891. 8°. 2 pt. xiii, 675 pp. 53 pl. and maps; xviii, 576 pp. 146 pl. and maps.

XIII. Thirteenth Annual Report of the United States Geological Survey, 1891-'92, by J. W. Powell. 1893. 8°. 3 pt. vii, 240 pp. 2 maps; x, 372 pp. 105 pl. and maps; xi, 486 pp. 77 pl. and maps.

XIV. Fourteenth Annual Report of the United States Geological Survey, 1892-'93, by J. W. Powell. 1893. 8°. 2 pt. vi, 321 pp. 1 pl.; xx, 597 pp. 74 pl.

XV. Fifteenth Annual Report of the United States Geological Survey, 1893-'94, by J. W. Powell. 1895. 8°. xiv, 755 pp. 48 pl.

XVI. Sixteenth Annual Report of the United States Geological Survey, 1894-'95, Charles D. Walcott, Director. 1895. (Part I, 1896.) 8°. 4 pt. xxii, 910 pp., 117 pl. and maps; xix, 598 pp., 43 pl. and maps; xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl.

XVII. Seventeenth Annual Report of the United States Geological Survey, 1895-'96, Charles D. Walcott, Director. 1896. 8°. 3 pt. in 4 vol. xxii, 1076 pp., 67 pl. and maps; xxv, 864 pp., 113 pl. and maps; xxiii, 542 pp., 8 pl. and maps; iii, 543-1058 pp., 9-13 pl.

XVIII. Eighteenth Annual Report of the United States Geological Survey, 1896-'97, Charles D. Walcott, Director. 1897. (Parts II and III, 1898.) 8°. 5 pt. in 6 vol. 440 pp., 4 pl. and maps; v, 653 pp., 105 pl. and maps; v, 861 pp., 118 pl. and maps; x, 756 pp., 102 pl. and maps; xii, 642 pp., 1 vol.; 643-1400 pp.

MONOGRAPHS.

- I. Lake Bonneville, by Grove Karl Gilbert. 1890. 4°. xx, 438 pp. 51 pl. 1 map. Price \$1.50.
- II. Tertiary History of the Grand Cañon District, with Atlas, by Clarence E. Dutton, Capt. U. S. A. 1882. 4°. xiv, 264 pp. 42 pl. and atlas of 24 sheets folio. Price \$10.00.
- III. Geology of the Comstock Lode and the Washoe District, with Atlas, by George F. Becker. 1882. 4°. xv, 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.00.
- IV. Comstock Mining and Miners, by Elliot Lord. 1883. 4°. xiv, 451 pp. 3 pl. Price \$1.50.
- V. The Copper-Bearing Rocks of Lake Superior, by Roland Duer Irving. 1883. 4°. xvi, 464 pp. 151. 29 pl. and maps. Price \$1.85.
- VI. Contributions to the Knowledge of the Older Mesozoic Flora of Virginia, by William Morris Fontaine. 1883. 4°. xi, 144 pp. 54 l. 54 pl. Price \$1.05.
- VII. Silver-Lead Deposits of Eureka, Nevada, by Joseph Story Curtis. 1884. 4°. xiii, 200 pp. 16 pl. Price \$1.20.
- VIII. Paleontology of the Eureka District, by Charles Doolittle Walcott. 1884. 4°. xiii, 298 pp. 24 l. 24 pl. Price \$1.10.
- IX. Brachiopoda and Lamellibranchiata of the Raritan Clays and Greensand Marls of New Jersey, by Robert P. Whitfield. 1885. 4°. xx, 338 pp. 35 pl. 1 map. Price \$1.15.
- X. Dinocerata. A Monograph of an Extinct Order of Gigantic Mammals, by Othniel Charles Marsh. 1886. 4°. xviii, 243 pp. 56 l. 56 pl. Price \$2.70.
- XI. Geological History of Lake Lahontan, a Quaternary Lake of Northwestern Nevada, by Israel Cook Russell. 1885. 4°. xiv, 288 pp. 46 pl. and maps. Price \$1.75.
- XII. Geology and Mining Industry of Leadville, Colorado, with Atlas, by Samuel Franklin Emmons. 1886. 4°. xxix, 770 pp. 45 pl. and atlas of 35 sheets folio. Price \$8.40.
- XIII. Geology of the Quicksilver Deposits of the Pacific Slope, with Atlas, by George F. Becker. 1888. 4°. xix, 486 pp. 7 pl. and atlas of 14 sheets folio. Price \$2.00.
- XIV. Fossil Fishes and Fossil Plants of the Triassic Rocks of New Jersey and the Connecticut Valley, by John S. Newberry. 1888. 4°. xiv, 152 pp. 26 pl. Price \$1.00.
- XV. The Potomac or Younger Mesozoic Flora, by William Morris Fontaine. 1889. 4°. xiv, 377 pp. 180 pl. Text and plates bound separately. Price \$2.50.
- XVI. The Paleozoic Fishes of North America, by John Strong Newberry. 1889. 4°. 340 pp. 53 pl. Price \$1.00.
- XVII. The Flora of the Dakota Group, a Posthumous Work, by Leo Lesquereux. Edited by F. H. Knowlton. 1891. 4°. 400 pp. 66 pl. Price \$1.10.
- XVIII. Gasteropoda and Cephalopoda of the Raritan Clays and Greensand Marls of New Jersey, by Robert P. Whitfield. 1891. 4°. 402 pp. 50 pl. Price \$1.00.
- XIX. The Penokee Iron-Bearing Series of Northern Wisconsin and Michigan, by Roland D. Irving and C. R. Van Hise. 1892. 4°. xix, 534 pp. 37 pl. Price \$1.70.
- XX. Geology of the Eureka District, Nevada, with Atlas, by Arnold Hague. 1892. 4°. xvii, 419 pp. 8 pl. Price \$5.25.
- XXI. The Tertiary Rhynchophorous Coleoptera of North America, by Samuel Hubbard Scudder. 1893. 4°. xi, 206 pp. 18 pl. Price 90 cents.
- XXII. A Manual of Topographic Methods, by Henry Gannett, Chief Topographer. 1893. 4°. xiv, 300 pp. 18 pl. Price \$1.00.
- XXIII. Geology of the Green Mountains in Massachusetts, by Raphael Pumpelly, J. E. Wolff, and T. Nelson Dale. 1894. 4°. xiv, 206 pp. 23 pl. Price \$1.30.
- XXIV. Mollusca and Crustacea of the Miocene Formations of New Jersey, by Robert Parr Whitfield. 1894. 4°. 195 pp. 24 pl. Price 90 cents.
- XXV. The Glacial Lake Agassiz, by Warren Upham. 1895. 4°. xxiv, 658 pp. 38 pl. Price \$1.70.
- XXVI. Flora of the Amboy Clays, by John Strong Newberry; a Posthumous Work, edited by Arthur Hollick. 1895. 4°. 260 pp. 58 pl. Price \$1.00.
- XXVII. Geology of the Denver Basin, Colorado, by S. F. Emmons, Whitman Cross, and George H. Eldridge. 1896. 4°. 556 pp. 31 pl. Price \$1.50.
- XXVIII. The Marquette Iron-Bearing District of Michigan, with Atlas, by C. R. Van Hise and W. S. Bayley, including a Chapter on the Republic Trough, by H. L. Smyth. 1897. 4°. 608 pp. 35 pl. and atlas of 39 sheets folio. Price \$5.75.
- XXIX. Geology of Old Hampshire County, Massachusetts, comprising Franklin, Hampshire, and Hampden Counties, by Benjamin Kendall Emerson. 1898. 4°. xxi, 790 pp. 35 pl. Price .
- XXX. Fossil Medusæ, by Charles Doolittle Walcott. 1898. 4°. ix, 201 pp. 47 pl. Price \$1.50.
- In preparation:*
- XXXI. Geology of the Aspen Mining District, Colorado, with Atlas, by Josiah Edward Spurr.
- XXXII. Geology of the Yellowstone National Park, Part II, Descriptive Geology, Petrography, and Paleontology, by Arnold Hague, J. P. Iddings, W. Harvey Weed, Charles D. Walcott, G. H. Girty, T. W. Stanton, and F. H. Knowlton.
- XXXIII. Geology of the Narragansett Basin, by N. S. Shaler, J. B. Woodworth, and August F. Foerste.

- XXXIV. The Glacial Gravels of Maine and their Associated Deposits, by George H. Stone.
 — The later Extinct Floras of North America, by John Strong Newberry; edited by Arthur Hollick.
 — Flora of the Lower Coal Measures of Missouri, by David White.
 — The Crystal Falls Iron-Bearing District of Michigan, by J. Morgan Clements and Henry Lloyd Smyth; with a Chapter on the Sturgeon River Tongue, by William Shirley Bayley.
 — Sauropoda, by O. C. Marsh.
 — Stegosauria, by O. C. Marsh.
 — Brontotheriidae, by O. C. Marsh.
 — Flora of the Laramie and Allied Formations, by Frank Hall Knowlton.

BULLETINS.

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8°. 42 pp. 2 pl. Price 10 cents.
2. Gold and Silver Conversion Tables, giving the Coining Value of Troy Ounces of Fine Metal, etc., computed by Albert Williams, jr. 1883. 8°. 8 pp. Price 5 cents.
3. On the Fossil Faunas of the Upper Devonian, along the Meridian of 76° 30', from Tompkins County, New York, to Bradford County, Pennsylvania, by Henry S. Williams. 1884. 8°. 36 pp. Price 5 cents.
4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 36 pp. 9 pl. Price 5 cents.
5. A Dictionary of Altitudes in the United States, compiled by Henry Gannett. 1884. 8°. 325 pp. Price 20 cents.
6. Elevations in the Dominion of Canada, by J. W. Spencer. 1884. 8°. 43 pp. Price 5 cents.
7. *Mapoteca Geologica Americana*. A Catalogue of Geological Maps of America (North and South) 1752-1881, in Geographic and Chronologic Order, by Jules Marcou and John Belknap Marcou. 1884. 8°. 184 pp. Price 10 cents.
8. On Secondary Enlargements of Mineral Fragments in Certain Rocks, by R. D. Irving and C. R. Van Hise. 1884. 8°. 56 pp. 6 pl. Price 10 cents.
9. A Report of Work done in the Washington Laboratory during the Fiscal Year 1883-'84. F. W. Clarke, Chief Chemist. T. M. Chatard, Assistant Chemist. 1884. 8°. 40 pp. Price 5 cents.
10. On the Cambrian Faunas of North America. Preliminary Studies, by Charles Doolittle Walcott. 1884. 8°. 74 pp. 10 pl. Price 5 cents.
11. On the Quaternary and Recent Mollusca of the Great Basin; with Descriptions of New Forms, by R. Ellsworth Call. Introduced by a Sketch of the Quaternary Lakes of the Great Basin, by G. K. Gilbert. 1884. 8°. 66 pp. 6 pl. Price 5 cents.
12. A Crystallographic Study of the Thinolite of Lake Lahontan, by Edward S. Dana. 1884. 8°. 34 pp. 3 pl. Price 5 cents.
13. Boundaries of the United States and of the Several States and Territories, with a Historical Sketch of the Territorial Changes, by Henry Gannett. 1885. 8°. 135 pp. Price 10 cents.
14. The Electrical and Magnetic Properties of the Iron-Carburets, by Carl Barus and Vincent Strouhal. 1885. 8°. 238 pp. Price 15 cents.
15. On the Mesozoic and Cenozoic Paleontology of California, by Charles A. White. 1885. 8°. 33 pp. Price 5 cents.
16. On the Higher Devonian Faunas of Ontario County, New York, by John M. Clarke. 1885. 8°. 86 pp. 3 pl. Price 5 cents.
17. On the Development of Crystallization in the Igneous Rocks of Washoe, Nevada, with Notes on the Geology of the District, by Arnold Hague and Joseph P. Iddings. 1885. 8°. 44 pp. Price 5 cents.
18. On Marine Eocene, Fresh-Water Miocene, and Other Fossil Mollusca of Western North America, by Charles A. White. 1885. 8°. 26 pp. 3 pl. Price 5 cents.
19. Notes on the Stratigraphy of California, by George F. Becker. 1885. 8°. 28 pp. Price 5 cents.
20. Contributions to the Mineralogy of the Rocky Mountains, by Whitman Cross and W. F. Hillebrand. 1885. 8°. 114 pp. 1 pl. Price 10 cents.
21. The Lignites of the Great Sioux Reservation: a Report on the Region between the Grand and Moreau Rivers, Dakota, by Bailey Willis. 1885. 8°. 16 pp. 5 pl. Price 5 cents.
22. On New Cretaceous Fossils from California, by Charles A. White. 1885. 8°. 25 pp. 5 pl. Price 5 cents.
23. Observations on the Junction between the Eastern Sandstone and the Keweenaw Series on Keweenaw Point, Lake Superior, by R. D. Irving and T. C. Chamberlin. 1885. 8°. 124 pp. 17 pl. Price 15 cents.
24. List of Marine Mollusca, comprising the Quaternary Fossils and Recent Forms from American Localities between Cape Hatteras and Cape Roque, including the Bermudas, by William Healy Dall. 1885. 8°. 336 pp. Price 25 cents.
25. The Present Technical Condition of the Steel Industry of the United States, by Phineas Barnes. 1885. 8°. 85 pp. Price 10 cents.
26. Copper Smelting, by Henry M. Howe. 1885. 8°. 107 pp. Price 10 cents.
27. Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1884-'85. 1886. 8°. 80 pp. Price 10 cents.

28. The Gabbros and Associated Hornblende Rocks occurring in the Neighborhood of Baltimore, Maryland, by George Huntington Williams. 1886. 8°. 78 pp. 4 pl. Price 10 cents.
29. On the Fresh-Water Invertebrates of the North American Jurassic, by Charles A. White. 1886. 8°. 41 pp. 4 pl. Price 5 cents.
30. Second Contribution to the Studies on the Cambrian Faunas of North America, by Charles Doolittle Walcott. 1886. 8°. 369 pp. 33 pl. Price 25 cents.
31. Systematic Review of our Present Knowledge of Fossil Insects, including Myriapods and Arachnids, by Samuel Hubbard Scudder. 1886. 8°. 128 pp. Price 15 cents.
32. Lists and Analyses of the Mineral Springs of the United States (a Preliminary Study), by Albert C. Peale. 1886. 8°. 235 pp. Price 20 cents.
33. Notes on the Geology of Northern California, by J. S. Diller. 1886. 8°. 23 pp. Price 5 cents.
34. On the Relation of the Laramie Molluscan Fauna to that of the Succeeding Fresh-Water Eocene and Other Groups, by Charles A. White. 1886. 8°. 54 pp. 5 pl. Price 10 cents.
35. Physical Properties of the Iron-Carburets, by Carl Barus and Vincent Strouhal. 1886. 8°. 62 pp. Price 10 cents.
36. Subsidence of Fine Solid Particles in Liquids, by Carl Barus. 1886. 8°. 58 pp. Price 10 cents.
37. Types of the Laramie Flora, by Lester F. Ward. 1887. 8°. 354 pp. 57 pl. Price 25 cents.
38. Peridotite of Elliott County, Kentucky, by J. S. Diller. 1887. 8°. 31 pp. 1 pl. Price 5 cents.
39. The Upper Beaches and Deltas of the Glacial Lake Agassiz, by Warren Upham. 1887. 8°. 84 pp. 1 pl. Price 10 cents.
40. Changes in River Courses in Washington Territory due to Glaciation, by Bailey Willis. 1887. 8°. 10 pp. 4 pl. Price 5 cents.
41. On the Fossil Faunas of the Upper Devonian—the Genesee Section, New York, by Henry S. Williams. 1887. 8°. 121 pp. 4 pl. Price 15 cents.
42. Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1885-'86. F. W. Clarke, Chief Chemist. 1887. 8°. 152 pp. 1 pl. Price 15 cents.
43. Tertiary and Cretaceous Strata of the Tuscaloosa, Tombigbee, and Alabama Rivers, by Eugene A. Smith and Lawrence C. Johnson. 1887. 8°. 189 pp. 21 pl. Price 15 cents.
44. Bibliography of North American Geology for 1886, by Nelson H. Darton. 1887. 8°. 35 pp. Price 5 cents.
45. The Present Condition of Knowledge of the Geology of Texas, by Robert T. Hill. 1887. 8°. 94 pp. Price 10 cents.
46. Nature and Origin of Deposits of Phosphate of Lime, by R. A. F. Penrose, jr., with an Introduction by N. S. Shaler. 1888. 8°. 143 pp. Price 15 cents.
47. Analyses of Waters of the Yellowstone National Park, with an Account of the Methods of Analysis employed, by Frank Austin Gooch and James Edward Whitfield. 1888. 8°. 84 pp. Price 10 cents.
48. On the Form and Position of the Sea Level, by Robert Simpson Woodward. 1888. 8°. 83 pp. Price 10 cents.
49. Latitudes and Longitudes of Certain Points in Missouri, Kansas, and New Mexico, by Robert Simpson Woodward. 1889. 8°. 133 pp. Price 15 cents.
50. Formulas and Tables to facilitate the Construction and Use of Maps, by Robert Simpson Woodward. 1889. 8°. 124 pp. Price 15 cents.
51. On Invertebrate Fossils from the Pacific Coast, by Charles Abiathar White. 1889. 8°. 102 pp. 14 pl. Price 15 cents.
52. Subaërial Decay of Rocks and Origin of the Red Color of Certain Formations, by Israel Cook Russell. 1889. 8°. 65 pp. 5 pl. Price 10 cents.
53. The Geology of Nantucket, by Nathaniel Southgate Shaler. 1889. 8°. 55 pp. 10 pl. Price 10 cents.
54. On the Thermo-Electric Measurement of High Temperatures, by Carl Barus. 1889. 8°. 313 pp. incl. 1 pl. 11 pl. Price 25 cents.
55. Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1886-'87. Frank Wigglesworth Clarke, Chief Chemist. 1889. 8°. 96 pp. Price 10 cents.
56. Fossil Wood and Lignite of the Potomac Formation, by Frank Hall Knowlton. 1889. 8°. 72 pp. 7 pl. Price 10 cents.
57. A Geological Reconnaissance in Southwestern Kansas, by Robert Hay. 1890. 8°. 49 pp. 2 pl. Price 5 cents.
58. The Glacial Boundary in Western Pennsylvania, Ohio, Kentucky, Indiana, and Illinois, by George Frederick Wright, with an Introduction by Thomas Chrowder Chamberlin. 1890. 8°. 112 pp. 8 pl. Price 15 cents.
59. The Gabbros and Associated Rocks in Delaware, by Frederick D. Chester. 1890. 8°. 45 pp. 1 pl. Price 10 cents.
60. Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1887-'88. F. W. Clarke, Chief Chemist. 1890. 8°. 174 pp. Price 15 cents.
61. Contributions to the Mineralogy of the Pacific Coast, by William Harlow Melville and Waldemar Lindgren. 1890. 8°. 40 pp. 3 pl. Price 5 cents.
62. The Greenstone Schist Areas of the Menominee and Marquette Regions of Michigan; a Contri-

bution to the Subject of Dynamic Metamorphism in Eruptive Rocks, by George Huntington Williams; with an Introduction by Roland Duer Irving. 1890. 8°. 241 pp. 16 pl. Price 30 cents.

63. A Bibliography of Paleozoic Crustacea from 1698 to 1889, including a List of North American Species and a Systematic Arrangement of Genera, by Anthony W. Vogdes. 1890. 8°. 177 pp. Price 15 cents.

64. A report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1888-'89. F. W. Clarke, Chief Chemist. 1890. 8°. 60 pp. Price 10 cents.

65. Stratigraphy of the Bituminous Coal Field of Pennsylvania, Ohio, and West Virginia, by Israel C. White. 1891. 8°. 212 pp. 11 pl. Price 20 cents.

66. On a Group of Volcanic Rocks from the Tewan Mountains, New Mexico, and on the Occurrence of Primary Quartz in Certain Basalts, by Joseph Paxson Iddings. 1890. 8°. 34 pp. Price 5 cents.

67. The Relations of the Traps of the Newark System in the New Jersey Region, by Nelson Horatio Darton. 1890. 8°. 82 pp. Price 10 cents.

68. Earthquakes in California in 1889, by James Edward Keeler. 1890. 8°. 25 pp. Price 5 cents.

69. A Classified and Annotated Bibliography of Fossil Insects, by Samuel Hubbard Scudder. 1890. 8°. 101 pp. Price 15 cents.

70. Report on Astronomical Work of 1889 and 1890, by Robert Simpson Woodward. 1890. 8°. 79 pp. Price 10 cents.

71. Index to the Known Fossil Insects of the World, including Myriapods and Arachnids, by Samuel Hubbard Scudder. 1891. 8°. 744 pp. Price 50 cents.

72. Altitudes between Lake Superior and the Rocky Mountains, by Warren Upham. 1891. 8°. 229 pp. Price 20 cents.

73. The Viscosity of Solids, by Carl Barus. 1891. 8°. xii, 139 pp. 6 pl. Price 15 cents.

74. The Minerals of North Carolina, by Frederick Augustus Genth. 1891. 8°. 119 pp. Price 15 cents.

75. Record of North American Geology for 1887 to 1889, inclusive, by Nelson Horatio Darton. 1891. 8°. 173 pp. Price 15 cents.

76. A Dictionary of Altitudes in the United States (Second Edition), compiled by Henry Gannett, Chief Topographer. 1891. 8°. 393 pp. Price 25 cents.

77. The Texan Permian and its Mesozoic Types of Fossils, by Charles A. White. 1891. 8°. 51 pp. 4 pl. Price 10 cents.

78. A Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1889-'90. F. W. Clarke, Chief Chemist. 1891. 8°. 131 pp. Price 15 cents.

79. A Late Volcanic Eruption in Northern California and its Peculiar Lava, by J. S. Diller. 1891. 8°. 33 pp. 17 pl. Price 10 cents.

80. Correlation Papers—Devonian and Carboniferous, by Henry Shaler Williams. 1891. 8°. 279 pp. Price 20 cents.

81. Correlation Papers—Cambrian, by Charles Doolittle Walcott. 1891. 8°. 447 pp. 3 pl. Price 25 cents.

82. Correlation Papers—Cretaceous, by Charles A. White. 1891. 8°. 273 pp. 3 pl. Price 20 cents.

83. Correlation Papers—Eocene, by William Bullock Clark. 1891. 8°. 173 pp. 2 pl. Price 15 cents.

84. Correlation Papers—Neocene, by W. H. Dall and G. D. Harris. 1892. 8°. 349 pp. 3 pl. Price 25 cents.

85. Correlation Papers—The Newark System, by Israel Cook Russell. 1892. 8°. 344 pp. 13 pl. Price 25 cents.

86. Correlation Papers—Archean and Algonkian, by C. R. Van Hise. 1892. 8°. 549 pp. 12 pl. Price 25 cents.

87. A Synopsis of American Fossil Brachiopoda, including Bibliography and Synonymy, by Charles Schuchert. 1897. 8°. 464 pp. Price 30 cents.

88. The Cretaceous Foraminifera of New Jersey, by Rufus Mather-Bagg, Jr. 1898. 8°. 89 pp. 6 pl. Price 10 cents.

89. Some Lava Flows of the Western Slope of the Sierra Nevada, California, by F. Leslie Ransome. 1898. 8°. 74 pp. 11 pl. Price 15 cents.

90. A Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1890-'91. F. W. Clarke, Chief Chemist. 1892. 8°. 77 pp. Price 10 cents.

91. Record of North American Geology for 1890, by Nelson Horatio Darton. 1891. 8°. 88 pp. Price 10 cents.

92. The Compressibility of Liquids, by Carl Barus. 1892. 8°. 96 pp. 29 pl. Price 10 cents.

93. Some Insects of Special Interest from Florissant, Colorado, and Other Points in the Tertiaries of Colorado and Utah, by Samuel Hubbard Scudder. 1892. 8°. 35 pp. 3 pl. Price 5 cents.

94. The Mechanism of Solid Viscosity, by Carl Barus. 1892. 8°. 138 pp. Price 15 cents.

95. Earthquakes in California in 1890 and 1891, by Edward Singleton Holden. 1892. 8°. 31 pp. Price 5 cents.

96. The Volume Thermodynamics of Liquids, by Carl Barus. 1892. 8°. 100 pp. Price 10 cents.

97. The Mesozoic Echinodermata of the United States, by William Bullock Clark. 1893. 8°. 207 pp. 50 pl. Price 20 cents.

98. Flora of the Outlying Carboniferous Basins of Southwestern Missouri, by David White. 1893. 8°. 139 pp. 5 pl. Price 15 cents.
99. Record of North American Geology for 1891, by Nelson Horatio Darton. 1892. 8°. 73 pp. Price 10 cents.
100. Bibliography and Index of the Publications of the U. S. Geological Survey, 1879-1892, by Philip Creveling Warman. 1893. 8°. 495 pp. Price 25 cents.
101. Insect Fauna of the Rhode Island Coal Field, by Samuel Hubbard Scudder. 1893. 8°. 27 pp. 2 pl. Price 5 cents.
102. A Catalogue and Bibliography of North American Mesozoic Invertebrata, by Cornelius Breckinridge Boyle. 1893. 8°. 315 pp. Price 25 cents.
103. High Temperature Work in Igneous Fusion and Ebullition, chiefly in Relation to Pressure, by Carl Barus. 1893. 8°. 57 pp. 9 pl. Price 10 cents.
104. Glaciation of the Yellowstone Valley north of the Park, by Walter Harvey Weed. 1893. 8°. 41 pp. 4 pl. Price 5 cents.
105. The Laramie and the Overlying Livingston Formation in Montana, by Walter Harvey Weed, with Report on Flora, by Frank Hall Knowlton. 1893. 8°. 68 pp. 6 pl. Price 10 cents.
106. The Colorado Formation and its Invertebrate Fauna, by T. W. Stanton. 1893. 8°. 288 pp. 45 pl. Price 20 cents.
107. The Trap Dikes of the Lake Champlain Region, by James Furman Kemp and Vernon Freeman Marsters. 1893. 8°. 62 pp. 4 pl. Price 10 cents.
108. A Geological Reconnaissance in Central Washington, by Israel Cook Russell. 1893. 8°. 108 pp. 12 pl. Price 15 cents.
109. The Eruptive and Sedimentary Rocks on Pigeon Point, Minnesota, and their Contact Phenomena, by William Shirley Bayley. 1893. 8°. 121 pp. 16 pl. Price 15 cents.
110. The Paleozoic Section in the Vicinity of Three Forks, Montana, by Albert Charles Peale. 1893. 8°. 56 pp. 6 pl. Price 10 cents.
111. Geology of the Big Stone Gap Coal Field of Virginia and Kentucky, by Marius R. Campbell. 1893. 8°. 106 pp. 6 pl. Price 15 cents.
112. Earthquakes in California in 1892, by Charles D. Perrine. 1893. 8°. 57 pp. Price 10 cents.
113. A Report of Work done in the Division of Chemistry during the Fiscal Years 1891-'92 and 1892-'93. F. W. Clarke, Chief Chemist. 1893. 8°. 115 pp. Price 15 cents.
114. Earthquakes in California in 1893, by Charles D. Perrine. 1894. 8°. 23 pp. Price 5 cents.
115. A Geographic Dictionary of Rhode Island, by Henry Gannett. 1894. 8°. 31 pp. Price 5 cents.
116. A Geographic Dictionary of Massachusetts, by Henry Gannett. 1894. 8°. 126 pp. Price 15 cents.
117. A Geographic Dictionary of Connecticut, by Henry Gannett. 1894. 8°. 67 pp. Price 10 cents.
118. A Geographic Dictionary of New Jersey, by Henry Gannett. 1894. 8°. 131 pp. Price 15 cents.
119. A Geological Reconnaissance in Northwest Wyoming, by George Homans Eldridge. 1894. 8°. 72 pp. 4 pl. Price 10 cents.
120. The Devonian System of Eastern Pennsylvania and New York, by Charles S. Prosser. 1895. 8°. 81 pp. 2 pl. Price 10 cents.
121. A Bibliography of North American Paleontology, by Charles Rollin Keyes. 1894. 8°. 251 pp. Price 20 cents.
122. Results of Primary Triangulation, by Henry Gannett. 1894. 8°. 412 pp. 17 pl. Price 25 cents.
123. A Dictionary of Geographic Positions, by Henry Gannett. 1895. 8°. 183 pp. 1 pl. Price 15 cents.
124. Revision of North American Fossil Cockroaches, by Samuel Hubbard Scudder. 1895. 8°. 176 pp. 12 pl. Price 15 cents.
125. The Constitution of the Silicates, by Frank Wigglesworth Clarke. 1895. 8°. 109 pp. Price 15 cents.
126. A Mineralogical Lexicon of Franklin, Hampshire, and Hampden Counties, Massachusetts, by Benjamin Kendall Emerson. 1895. 8°. 180 pp. 1 pl. Price 15 cents.
127. Catalogue and Index of Contributions to North American Geology, 1732-1891, by Nelson Horatio Darton. 1896. 8°. 1045 pp. Price 60 cents.
128. The Bear River Formation and its Characteristic Fauna, by Charles A. White. 1895. 8°. 108 pp. 11 pl. Price 15 cents.
129. Earthquakes in California in 1894, by Charles D. Perrine. 1895. 8°. 25 pp. Price 5 cents.
130. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for 1892 and 1893, by Fred Boughton Weeks. 1896. 8°. 210 pp. Price 20 cents.
131. Report of Progress of the Division of Hydrography for the Calendar Years 1893 and 1894, by Frederick Haynes Newell, Topographer in Charge. 1895. 8°. 126 pp. Price 15 cents.
132. The Disseminated Lead Ores of Southeastern Missouri, by Arthur Winslow. 1896. 8°. 31 pp. Price 5 cents.
133. Contributions to the Cretaceous Paleontology of the Pacific Coast: The Fauna of the Knoxville Beds, by T. W. Stanton. 1895. 8°. 132 pp. 20 pl. Price 15 cents.
134. The Cambrian Rocks of Pennsylvania, by Charles Doolittle Walcott. 1896. 8°. 43 pp. 15 pl. Price 5 cents.
135. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1894, by F. B. Weeks. 1896. 8°. 141 pp. Price 15 cents.

136. Volcanic Rocks of South Mountain, Pennsylvania, by Florence Bascom. 1896. 8°. 124 pp. 28 pl. Price 15 cents.
 137. The Geology of the Fort Riley Military Reservation and Vicinity, Kansas, by Robert Hay. 1896. 8°. 35 pp. 8 pl. Price 5 cents.
 138. Artesian-Well Prospects in the Atlantic Coastal Plain Region, by N. H. Darton. 1896. 8°. 228 pp. 19 pl. Price 20 cents.
 139. Geology of the Castle Mountain Mining District, Montana, by W. H. Weed and L. V. Pirsson. 1896. 8°. 164 pp. 17 pl. Price 15 cents.
 140. Report of Progress of the Division of Hydrography for the Calendar Year 1895, by Frederick Haynes Newell, Hydrographer in Charge. 1896. 8°. 356 pp. Price 25 cents.
 141. The Eocene Deposits of the Middle Atlantic Slope in Delaware, Maryland, and Virginia, by William Bullock Clark. 1896. 8°. 167 pp. 40 pl. Price 15 cents.
 142. A Brief Contribution to the Geology and Paleontology of Northwestern Louisiana, by T. Wayland Vaughan. 1896. 8°. 65 pp. 4 pl. Price 10 cents.
 143. A Bibliography of Clays and the Ceramic Arts, by John C. Branner. 1896. 8°. 114 pp. Price 15 cents.
 144. The Moraines of the Missouri Coteau and their Attendant Deposits, by James Edward Todd. 1896. 8°. 71 pp. 21 pl. Price 10 cents.
 145. The Potomac Formation in Virginia, by W. M. Fontaine. 1896. 8°. 149 pp. 2 pl. Price 15 cents.
 146. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1895, by F. B. Weeks. 1896. 8°. 130 pp. Price 15 cents.
 147. Earthquakes in California in 1895, by Charles D. Perrine, Assistant Astronomer in Charge of Earthquake Observations at the Lick Observatory. 1896. 8°. 23 pp. Price 5 cents.
 148. Analyses of Rocks, with a Chapter on Analytical Methods, Laboratory of the United States Geological Survey, 1880 to 1896, by F. W. Clarke and W. F. Hillebrand. 1897. 8°. 306 pp. Price 20 cents.
 149. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1896, by Fred Boughton Weeks. 1897. 8°. 152 pp. Price 15 cents.
 150. The Educational Series of Rock Specimens Collected and Distributed by the United States Geological Survey, by Joseph Silas Diller. 1898. 8°. 400 pp. 47 pl. Price 25 cents.
 151. The Lower Cretaceous Gryphaas of the Texas Region, by R. T. Hill and T. Wayland Vaughan. 1898. 8°. 139 pp. 35 pl. Price 15 cents.
 152. A Catalogue of the Cretaceous and Tertiary Plants of North America, by F. H. Knowlton. 1898. 8°. 247 pp. Price 20 cents.
- In press:*
153. A Bibliographic Index of North American Carboniferous Invertebrates, by Stuart Weller. 1898. 8°. pp. Price cents.
 154. A Gazetteer of Kansas, by Henry Gannett. 1898. 8°. pp. Price cents.
 155. Earthquakes in California in 1896 and 1897, by Charles D. Perrine, Assistant Astronomer in Charge of Earthquake Observations at the Lick Observatory. 1898. 8°. pp. Price cents.

WATER-SUPPLY AND IRRIGATION PAPERS.

By act of Congress approved June 11, 1896, the following provision was made:

"Provided, That hereafter the reports of the Geological Survey in relation to the gauging of streams and to the methods of utilizing the water resources may be printed in octavo form, not to exceed one hundred pages in length and five thousand copies in number; one thousand copies of which shall be for the official use of the Geological Survey, one thousand five hundred copies shall be delivered to the Senate, and two thousand five hundred copies shall be delivered to the House of Representatives, for distribution."

Under this law the following papers have been published:

1. Pumping Water for Irrigation, by Herbert M. Wilson. 1896. 8°. 57 pp. 9 pl.
2. Irrigation near Phoenix, Arizona, by Arthur P. Davis. 1897. 8°. 97 pp. 31 pl.
3. Sewage Irrigation, by George W. Rafter. 1897. 8°. 100 pp. 4 pl.
4. A Reconnaissance in Southeastern Washington, by Israel Cook Russell. 1897. 8°. 96 pp. 7 pl.
5. Irrigation Practice on the Great Plains, by Elias Branson Cowgill. 1897. 8°. 39 pp. 12 pl.
6. Underground Waters of Southwestern Kansas, by Erasmus Haworth. 1897. 8°. 65 pp. 12 pl.
7. Seepage Waters of Northern Utah, by Samuel Fortier. 1897. 8°. 50 pp. 3 pl.
8. Windmills for Irrigation, by E. C. Murphy. 1897. 8°. 49 pp. 8 pl.
9. Irrigation near Greeley, Colorado, by David Boyd. 1897. 8°. 90 pp. 21 pl.
10. Irrigation in Mesilla Valley, New Mexico, by F. C. Barker. 1898. 8°. 51 pp. 11 pl.
11. River Heights for 1896, by Arthur P. Davis. 1897. 8°. 100 pp.
12. Water Resources of Southeastern Nebraska, by Nelson H. Darton. 1898. 8°. 56 pp. 21 pl.
13. Irrigation Systems in Texas, by William Ferguson Hutson. 1898. 8°. 67 pp. 10 pl.
14. New Tests of Certain Pumps and Water-Lifts used in Irrigation, by Ozni P. Hood. 1898. 8°. 91 pp. 1 pl.
15. Operations at River Stations, 1897, Part I. 1898. 8°. 100 pp.
16. Operations at River Stations, 1897, Part II. 1898. 8°. 101-200 pp.

TOPOGRAPHIC MAP OF THE UNITED STATES.

When, in 1882, the Geological Survey was directed by law to make a geologic map of the United States, there was in existence no suitable topographic map to serve as a base for the geologic map. The preparation of such a topographic map was therefore immediately begun. About one-fifth of the area of the country, excluding Alaska, has now been thus mapped. The map is published in atlas sheets. Under the plan adopted the entire area of the country is divided into small quadrangular districts (designated *quadrangles*), bounded by certain meridians and parallels. The unit of survey is also the unit of publication. The separate sheets are sold at 5 cents each when fewer than 100 copies are purchased, but when they are ordered in lots of 100 or more copies, whether of the same sheet or of different sheets, the price is 2 cents each. The mapped areas are widely scattered, nearly every State being represented. More than 900 sheets have been engraved and printed; they are tabulated by States in the Survey's "List of Publications," a pamphlet which may be had on application.

The map sheets represent a great variety of topographic features, and with the aid of descriptive text they can be used to illustrate topographic forms. This has led to the projection of an educational series of topographic folios, for use wherever geography is taught in high schools, academies, and colleges. Of this series the first folio has been issued, viz:

1. Physiographic types, by Henry Gannett, 1898, folio, consisting of the following sheets and 4 pages of descriptive text: Fargo (N. Dak.-Minn.), a region in youth; Charleston (W. Va.), a region in maturity; Caldwell (Kans.), a region in old age; Palmyra (Va.), a rejuvenated region; Mount Shasta (Cal.), a young volcanic mountain; Eagle (Wis.), moraines; Sun Prairie (Wis.), drumlins; Donaldsonville (La.), river flood plains; Boothbay (Me.), a fiord coast; Atlantic City (N. J.), a barrier-beach coast.

GEOLOGIC ATLAS OF THE UNITED STATES.

The Geologic Atlas of the United States is the final form of publication of the topographic and geologic maps. The atlas is issued in parts, or folios, progressively as the surveys are extended, and is designed ultimately to cover the entire country.

Each folio contains topographic, geologic, economic, and structural maps, together with textual descriptions and explanations, and is designated by the name of a principal town or of a prominent natural feature within the district.

Two forms of issue have been adopted, a "library edition" and a "field edition." In both the sheets are bound between heavy paper covers, but the library copies are permanently bound, while the sheets and covers of the field copies are only temporarily wired together.

Under the law a copy of each folio is sent to certain public libraries and educational institutions. The remainder are sold at 25 cents each, except such as contain an unusual amount of matter, which are priced accordingly. Prepayment is obligatory. The folios ready for distribution are listed below.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
1	Livingston	Montana..	110°-111°	45°-46°	3,354	25
2	Ringgold	Georgia... }	85°-85° 30'	34° 30'-35°	980	25
3	Placerville	Tennessee }	120° 30'-121°	38° 30'-39°	932	25
4	Kingston	California. }	84° 30'-85°	35° 30'-36°	960	25
5	Sacramento	Tennessee }	121°-121° 30'	38° 30'-39°	932	25
6	Chattanooga	California. }	85°-85° 30'	35°-35° 30'	975	25
7	Pikes Peak *	Tennessee }	105°-105° 30'	38° 30'-39°	932	25
8	Sewanee	Colorado.. }	85° 30'-86°	35°-35° 30'	975	25
9	Anthracite-Crest- ed Butte.	Tennessee }	106° 45'-107° 15'	38° 45'-39°	465	50
10	Harpers Ferry ...	Virginia.. }	77° 30'-78°	39°-39° 30'	925	25
11	Jackson	Maryland. }	77° 30'-78°	39°-39° 30'	925	25
12	Estillville	California. }	120° 30'-121°	38°-38° 30'	938	25
13	Fredericksburg ..	Virginia.. }	82° 30'-83°	36° 30'-37°	957	25
14	Staunton	Kentucky. }	77°-77° 30'	38°-38° 30'	938	25
15	Lassen Peak	Maryland. }	79°-79° 30'	38°-38° 30'	938	25
16	Knoxville	West Va.. }	121°-122°	40°-41°	3,634	25
17	Marysville	California. }	83° 30'-84°	35° 30'-36°	925	25
18	Smartsville	Tennessee }	121° 30'-122°	39°-39° 30'	925	25
19	Stevenson	N. Carolina }	121°-121° 30'	39°-39° 30'	925	25
20	Cleveland	Alabama.. }	85° 30'-86°	34° 30'-35°	980	25
21	Pikeville	Georgia... }	84° 30'-85°	35°-35° 30'	975	25
22	McMinnville	Tennessee }	85°-85° 30'	35° 30'-36°	969	25
23	Nomini	Tennessee }	85° 30'-86°	35° 30'-36°	969	25
24	Three Forks	Maryland. }	76° 30'-77°	38°-38° 30'	938	25
		Virginia.. }	111°-112°	45°-46°	3,354	50
		Montana.. }				

* Out of stock.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
25	London	Tennessee	84°-84° 30'	35° 30'-36°	969	25
26	Pocahontas	Virginia .. West Va..	81°-81° 30'	37°-37° 30'	951	25
27	Morristown	Tennessee	83°-83° 30'	36°-36° 30'	963	25
28	Piedmont	Virginia .. Maryland .. West Va..	79°-79° 30'	39°-39° 30'	925	25
29	Nevada City: Nevada City. Grass Valley. Banner Hill.	California.	121° 00' 25"-121° 03' 45" 121° 01' 35"-121° 05' 04" 120° 57' 05"-121° 00' 25"	39° 13' 50"-39° 17' 16" 39° 10' 22"-39° 13' 50" 39° 13' 50"-39° 17' 16"	11.65 12.09 11.65	50
30	Yellowstone National Park: Gallatin	Wyoming.	110°-111°	44°-45°	3,412	75
	Canyon					
	Shoshone					
	Lake					
31	Pyramid Peak	California.	120°-120° 30'	38° 30'-39°	932	25
32	Franklin	Virginia .. West Va..	79°-79° 30'	38° 30'-39°	932	25
33	Briceville	Tennessee	84°-84° 30'	36°-36° 30'	963	25
34	Buckhannon	West Va..	80°-80° 30'	38° 30'-39°	932	25
35	Gadsden	Alabama	86°-86° 30'	34°-34° 30'	986	25
36	Pueblo	Colorado	104° 30'-105°	38°-38° 30'	938	50
37	Downsville	California.	120° 30'-121°	39°-39° 40'	919	25
38	Butte Special	Montana	112° 29' 30"-112° 36' 42"	45° 59' 28"-46° 02' 54"	22.80	50
39	Truckee	California.	120°-120° 30'	39°-39° 30'	925	25
40	Wartburg	Tennessee	84° 30'-85°	36°-36° 30'	963	25
41	Sonora	California.	120°-120° 30'	37°-30'-38°	944	25

STATISTICAL PAPERS.

Mineral Resources of the United States, 1882, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1883 and 1884, by Albert Williams, jr. 1885. 8°. xiv, 1016 pp. Price 60 cents.

Mineral Resources of the United States, 1885. Division of Mining Statistics and Technology. 1886. 8°. vii, 576 pp. Price 40 cents.

Mineral Resources of the United States, 1886, by David T. Day. 1887. 8°. viii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1887, by David T. Day. 1888. 8°. vii, 832 pp. Price 50 cents.

Mineral Resources of the United States, 1888, by David T. Day. 1890. 8°. vii, 652 pp. Price 50 cents.

Mineral Resources of the United States, 1889 and 1890, by David T. Day. 1892. 8°. viii, 671 pp. Price 50 cents.

Mineral Resources of the United States, 1891, by David T. Day. 1893. 8°. vii, 630 pp. Price 50 cents.

Mineral Resources of the United States, 1892, by David T. Day. 1893. 8°. vii, 850 pp. Price 50 cents.

Mineral Resources of the United States, 1893, by David T. Day. 1894. 8°. viii, 810 pp. Price 50 cents.

On March 2, 1895, the following provision was included in an act of Congress:

"Provided, That hereafter the report of the mineral resources of the United States shall be issued as a part of the report of the Director of the Geological Survey."

In compliance with this legislation the following reports have been published:

Mineral Resources of the United States, 1894, David T. Day, Chief of Division. 1895. 8°. xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl. Being Parts III and IV of the Sixteenth Annual Report.

Mineral Resources of the United States, 1895, David T. Day, Chief of Division. 1896. 8°. xxiii, 542 pp., 8 pl. and maps; iii, 543-1058 pp., 9-13 pl. Being Part III (in 2 vols.) of the Seventeenth Annual Report.

Mineral Resources of the United States, 1896, David T. Day, Chief of Division. 1897. 8°. xii, 642 pp., 1 pl.; 643-1400 pp. Being Part V (in 2 vols.) of the Eighteenth Annual Report.

The report on the mineral resources for the calendar year 1897 will form a part of the Nineteenth Annual Report of the Survey.

The money received from the sale of the Survey publications is deposited in the Treasury, and the Secretary of the Treasury declines to receive bank checks, drafts, or postage stamps; all remittances, therefore, must be by MONEY ORDER, made payable to the Director of the United States Geological Survey, or in CURRENCY—the exact amount. Correspondence relating to the publications of the Survey should be addressed to—

THE DIRECTOR,

UNITED STATES GEOLOGICAL SURVEY,

WASHINGTON, D. C.

WASHINGTON, D. C., June, 1898.

[Take this leaf out and paste the separated titles upon three of your catalogue cards. The first and second titles need no addition; over the third write that subject under which you would place the book in your library.]

LIBRARY CATALOGUE SLIPS.

United States. *Department of the interior. (U. S. geological survey.)*

Department of the interior | — | Bulletin | of the | United
States | geological survey | no. 152 | [Seal of the department] |
Washington | government printing office | 1898

Second title: United States geological survey | Charles D. Walcott, director | — | A catalogue | of the | Cretaceous and Tertiary plants of North America | by | Frank Hall Knowlton | [Vignette] |

Washington | government printing office | 1898
8°. 247 pp.

Knowlton (Frank Hall).

United States geological survey | Charles D. Walcott, director | — | A catalogue | of the | Cretaceous and Tertiary plants of North America | by | Frank Hall Knowlton | [Vignette] |

Washington | government printing office | 1898
8°. 247 pp.

[UNITED STATES. *Department of the interior. (U. S. geological survey.)*
Bulletin 152.]

United States geological survey | Charles D. Walcott, director | — | A catalogue | of the | Cretaceous and Tertiary plants of North America | by | Frank Hall Knowlton | [Vignette] |

Washington | government printing office | 1898
8°. 247 pp.

[UNITED STATES. *Department of the interior. (U. S. geological survey.)*
Bulletin 152.]